

# **AFFIDAVIT OF BRUCE MILLER M.S. CIH**

STATE OF IDAHO                                 )  
                                                              ) ss.  
COUNTY OF BONNEVILLE                 )

BRUCE MILLER, being first duly sworn on oath, deposes and declares as follows:

1. I am above the age of 18 and am competent to make this affidavit.
2. I am a Board-Certified Industrial Hygienist (CIH) through the American Board of Industrial Hygiene, with a Master's Degree in Industrial Hygiene from Central Missouri State University, and I received my BS in Industrial Technology from Southern Illinois University with an A.A.S. in Bioenvironmental Engineering Technology,
3. I am President and owner of Health & Safety Services, LLC with more than 33 years of experience in comprehensive health and safety practice specializing in conducting retrospective exposure assessments for Department of Energy workers for Employees Occupational Illness Compensation Program (EEOICP) and Hanford Presumptive Claims, Occupational Safety and Health Administration (OSHA) General Industry (29 CFR 1910) and Construction (29 CFR 1926) compliance, and developing workplace exposure assessment tools and controls for environmental remediation, construction, demolition, water damage/mold projects.
4. I have managed and supervised health, safety, and health physics personnel and provided project management, planning, regulatory support, and oversight to numerous environmental remediation, waste management, construction, decontamination and decommissioning, and microbial and indoor air quality investigations, and remediation projects.

5. I have served as the Chair of the American Industrial Hygiene Association (AIHA) Law Committee, Consultants Special Interest Committee, and member of the Indoor Environmental Air and Environmental Affairs Committees.
6. My complete Curriculum Vitae is attached as **Exhibit A** and details my knowledge, skills and experiences.
7. Specifically, I have knowledge and experience with the OSHA regulations and compliance and applied experience writing, implementing and auditing OSHA 29 CFR 1910.132, “Personal Protective Equipment” and 29 CFR 1910.134, “Respiratory Protection” programs and implementing procedures to mitigate risks associated with hazardous agents and infectious diseases; I have conducted compliance inspections of hospitals and reviewed infectious prevention and control programs to verify safe healthcare work environments and best practices.
8. In preparation for providing my opinions herein, I have reviewed the New York State Department of Health Covid Emergency Public Health Law 2.61 (Attached as **Exhibit 1**), the New York City Department of Health Covid Emergency Public Health Emergency Orders dated August 24, 2021, September 15, 2021, October 20, 2021 collectively attached as **Exhibit 2 (a)(b)(c)**, and I have reviewed the applicable regulations of the U.S. Department of Labor, Occupational Safety and Health Administration, along with documents of several New York hospitals’ Covid-19 workplace program policies, including the affidavits and documents provided by a certain class of New York healthcare workers, including the class represented by Plaintiff, Rachel Toussaint (“Healthcare Worker Class”) against certain New York hospitals and on behalf of a certain class of New York City (NYC) government workers from various NYC agencies including the Department of Education, Department of Transportation, Department of Sanitation, NYC Central Administration, Department of Children’s Services (“NYC Worker Class”), represented by the Plaintiff, Amour Bryan, a

**FACTUAL BACKGROUND**

9. Based on my review of the claims of the Healthcare Worker Class and the NYC Worker Class, both classes of Plaintiffs allege that they submitted requests to their employer to be exempted from the Covid-19 vaccine requirement implemented by NYC and the State of New York for healthcare employers pursuant to Emergency Orders issued by the New York State and City Departments of Health.
10. Based on my knowledge and experience consulting as an Industrial Hygienist for more than 30 years, there has never been adult vaccine mandates created or authorized by emergency order or otherwise by state or federal health officials as an occupational health and safety risk mitigation tool or control method for the purpose of eliminating or reducing the hazards caused by airborne pathogens and, in particular, airborne communicable diseases during a pandemic or even during an epidemic.
11. All of the exemption requests by each Plaintiff member of both Classes were denied, despite the fact that many of the Plaintiffs already worked remotely and had no contact with the public or had no direct contact with children if they worked for the Department of Education. In some instances, healthcare workers who refused the vaccine requested to be provided with or be allowed to use Powered Air-Purifying Respirator (PAPR) to keep themselves and patients safe while they worked face-to-face with patients. PAPRs provide a high level of respiratory protection greater than an N95 respirator or tight-fitting air-purifying respirator (APR).
12. All members of both Classes were subsequently terminated from their jobs and removed from their work sites by their employers because they would not comply with the employers'

implementation of NYS DOH and NYC DOH vaccine orders adopted by the employers as part of their workplace safety program.

13. Hospitals are one of the most hazardous places to work. In 2016, U.S. hospitals recorded 228,200 work-related injuries and illnesses, a rate of 5.9 work-related injuries and illnesses for every 100 full-time employees. This is twice the rate for private industry as a whole (U.S. Bureau of Labor Statistics).
14. According to OSHA, healthcare workers face numerous serious safety and health hazards in the workplace. They include needlestick/sharps injuries, exposure to bloodborne pathogens and biological hazards, potential chemical and drug exposures, waste anesthetic gas exposures, infectious respiratory hazards (including SARS-CoV-2), ergonomic hazards from lifting and similar repetitive tasks involving immobile patients, laser hazards, workplace violence, hazards associated with laboratories, and radioactive material and x-ray hazards.<sup>1</sup>
15. The OSHA website on “Infectious Disease,” which contains guidelines for the risk management and mitigation for specific infectious diseases, specifically states that healthcare workers are occupationally exposed to a variety of infectious diseases during the performance of their duties. The primary routes of infectious disease transmission in U.S. healthcare settings are contact, droplet, and airborne.<sup>2</sup>
16. Since 1970, when OSHA was formed under the U.S. Department of Labor, it has been law that employers are specifically responsible and have a duty for providing a safe and healthful workplace for workers, specifically to prevent workplace severe injury and death. It is not the duty of employees to identify hazards, perform risk assessments and implement hazard controls to eliminate or reduce risks.

---

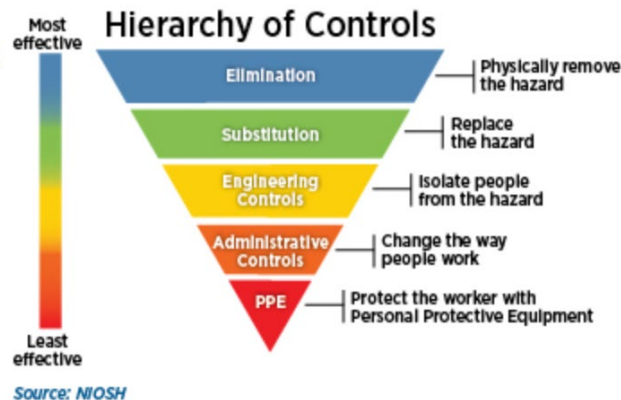
<sup>1</sup> See OSHA Healthcare Regulation Introduction. <https://www.osha.gov/healthcare>

<sup>2</sup> See OSHA Healthcare Infectious Diseases Guidelines - <https://www.osha.gov/healthcare/infectious-diseases/>

17. OSHA law expressly states that “the right to a safe workplace is a basic human right” and that “no worker should have to choose between their life and their job.”<sup>3</sup> The OSHA regulations are applicable to most states in U.S. through the Approved State Plans, which includes New York.
18. OSHA regulations provides the minimum standards for employers to meet their duty to provide a safe workplace for their employees. In addition to specific OSHA standards, the general duty clause of the Occupational Safety and Health Act of 1970, 29 U.S.C. 654(a)(1), requires each employer to “furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.”
19. According to the OSHA “Recommended Practices for Safety and Health Programs”, employers are required to select the hazard controls that are most feasible, effective and permanent, with a focus on first eliminating the hazard; and, if elimination is not possible, the below diagram illustrates the hierarchy of controls (also known as –“AKA” risk mitigations”) that are to be used by employers which are the most effective alone or in combination that aids an employer in getting the closest to eliminating a hazard.<sup>4</sup>

Action item 2: Select controls

Employers should select the controls that are the most feasible, effective, and permanent.



<sup>3</sup> See “All About OSHA”, U.S. Department of Labor OSHA Publication 3302-01R 2020.  
<https://www.osha.gov/laws-regs/standardinterpretations/2011-08-05>

<sup>4</sup> See OSHA Recommended Practices - <https://www.osha.gov/safety-management/hazard-prevention>

20. OSHA regulations specifically places the duty on the employers to identify and correct safety and health hazards in the workplace. This duty requires employers to first eliminate or reduce hazards by making feasible changes in working conditions, either through: 1) installation of workplace engineering controls, including but are not limited to installing ventilation systems to capture airborne particulates or aerosols, such as portable or fixed high-efficiency particulate air (HEPA) filtration systems, downdraft ventilation capture systems, and isolation of hazard sources with barriers to name a few, 2) implementing administrative controls, including, but are not limited to, changes to “how” an employee performs the essential functions of their job. Examples include training, limiting employee exposure time or location (which includes permitting remote work), screening to identify and isolate infectious patients, and other procedural requirements such as use of universal precautions, having infectious patients wear face masks, and posting hazard warning signs, and 3) providing personal protective equipment (PPE) where the workplace hazards cannot be controlled through engineering or administrative controls. Examples of PPE include, but are not limited to, protective clothing and gowns, gloves, face shields and goggles, respiratory protection, and hearing protection (hereafter collectively called “Risk Mitigation Tools”). PPE are to be used by the employer as a last line of defense when employee exposures cannot be reduced to an acceptable level using these other control methods.
21. OSHA Section 29 CFR 1910.132, Personal Protective Equipment, sets forth mandatory duties for all employers, including employers in the healthcare industry employees.
22. Employers are mandated under OSHA Personal Protective Equipment Standard, 29 CFR 1910.132, to conduct a hazard assessment to identify the hazards are present, or are likely to be present, which necessitate the use of PPE through a written hazard assessment.

23. Section 1910.132(d)(1)(i) specifically states:

“Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment.”

24. Section 1910.132 1910.132(d)(2) specifically states:

“The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.”

25. This written hazard assessment is critical since it serves as the foundation for the selection of all PPE to be used by employees. Task and area-specific hazards should be evaluated within the hazard assessment so the selected PPE is tailored to the specific hazards, areas, and employee duties.

26. OSHA 29 CFR 1910.134, Respiratory Protection, mandates the employer’s specific requirements for the selection and use of respirators for protection against airborne hazards where other hazard controls are not feasible.

27. Section 1910.134(a)(1) specifically states:

“In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.”

28. OSHA 1910.134(a)(2) further states:

“A **respirator shall be provided to each employee when such equipment is necessary to protect the health of such employee.** [Emphasis added] The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined in paragraph (c) of this section. The program shall cover each employee required by this section to use a respirator.”

29. OSHA 1910.134, Respiratory Protection requires employers to select respirators based on an evaluation of respiratory hazard(s) to which the worker is exposed and workplace and

identified relevant workplace and user factors. This respirator-specific evaluation is in addition to the hazard assessment required by the 1910.132 Personal Protective Equipment Standard.

30. Section 1910.134(d)(1)(iii) further states:

“The employer shall identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employer cannot identify or reasonably estimate the employee exposure, the employer shall consider the atmosphere to be [immediately dangerous to life and health] IDLH.”

31. The OSHA Respiratory Protection Standard provides for progressively more protective respirators (higher protection factor) based on the concentration of the airborne hazard or risk mitigation strategy or on a voluntary use basis if a higher level of protection is desired by the employee. For example, employees may use National Institute for Occupational Safety and Health (NIOSH)-certified filtering facepiece respirators (N95) for general interactions with infectious Covid-19 patients or may request their employer to provide a more protective PAPR for aerosol generator medical procedures conducted on infectious Covid-19 patients or to just provide a higher level of protection. OSHA has assigned protection factors (APFs) for each type of NIOSH-certified respirators with an properly fitted N95 filtering facepiece and half-face APR having a APF of 10 and a PAPR assigned a APF of 1,000.

32. Before the SARS-CoV-2 virus that causes Covid-19 emerged and became an occupational exposure concern, the OSHA law mandated employers eliminate or control airborne and other “hazards” from the workplace. OSHA standards have never defined employees as inherently hazardous or being hazardous substances or materials that must be eliminated from or otherwise controlled in the workplace. It had always been the duty of the employer to protect the employees through hazard elimination or mitigation. In addition, OSHA has also never mandated employees be vaccinated to eliminate workplace hazards.



33. The history of the founding of OSHA as revealed in the publication “About OSHA”<sup>5</sup>, the agency was created to keep employees in the workplace and as safe as possible.
34. In the case of airborne hazards, including infectious diseases of any kind (such as SARS-CoV-2 Covid-19), employers have a duty to implement the hierarchy of controls to eliminate or isolate the hazard (infectious airborne virus or infectious patient) using engineering controls where feasible, or minimizes employee exposures through the use of administrative control measures, which can include working remotely for employees whose jobs can be performed remotely, with all remote work-related costs to be paid for by the employer pursuant to OSHA guidelines.
35. Where hazard eliminating, isolation or the use of engineering and administrative controls do not adequately mitigate the workplace hazard, OSHA requires employers to conduct a written hazards assessment to identify the appropriate PPE for employees to protect them from the workplace hazard(s) that may include the selection and issuance of respirators to prevent inhalation hazards, based on an airborne hazard assessment.
36. Employers have the duty to select respirators, conduct medical surveillance, fit-test and train employees on the proper use, inspection, and cleaning of respirators, and perform an Respirator Program assessment of their written Respirator Protection Program in accordance with 29 CFR 1910.134, Respirator Protection, Section §1910.134(l), “Program Evaluation”.
37. In the context of the hazards caused by infectious disease, and in particular during the Covid-19 pandemic, OSHA describes the hazards in a January 29, 2021 publication titled “Protecting Workers: Guidance on Mitigating and Preventing the Spread of Covid-19 in the Workplace,”<sup>6</sup> as follows:

---

<sup>5</sup> See U.S. Department of Labor - OSHA Publication #- 3302-01R - “All About OSHA 2020” [https://www.osha.gov/sites/default/files/publications/all\\_about\\_OSHA.pdf](https://www.osha.gov/sites/default/files/publications/all_about_OSHA.pdf)

<sup>6</sup> See OSHA January 29, 2021 publication titled “Protecting Workers: Guidance on Mitigating and Preventing the Spread of Covid-19 in the Workplace” at <https://www.osha.gov/coronavirus/safework>

“SARS-CoV-2, the virus that causes **COVID-19** is highly infectious and spreads from person to person, including through aerosol transmission of particles produced when an infected person exhales, talks, vocalizes, sneezes, or coughs. COVID-19 is less commonly transmitted when people touch a contaminated object and then touch their eyes, nose, or mouth. The virus that causes COVID-19 is highly transmissible and can be spread by people who have no symptoms and who do not know they are infected. Particles containing the virus can travel more than 6 feet, especially indoors and in dry conditions with relative humidity below 40%. The [CDC estimates](#) that over fifty percent of the spread of the virus is from individuals with no symptoms at the time of spread.”

38. Unlike chemical airborne hazards, aerosol transmission from infectious patients causes exposures that cannot be routinely measured in the air and have no established occupational exposure limits. Healthcare employees working in close proximity to patients, are likely to have a high risk of inhaling infectious aerosols (droplets and particles). Respirators for healthcare employees, and masks or filtering facepieces for contagious patients, are essential to prevent employee exposures. The selection of respirators with higher APFs (for example, PAPRs equipped with HEPA filters provide the highest level of respiratory protection) for healthcare employees.
39. Control and mitigation airborne infectious diseases are in fact nothing new for employers within healthcare occupation settings. The OSHA Standard 29 CFR 1910.1030, Bloodborne Pathogens, requires employers to have a written Exposure Control Plan designed to eliminate or minimize employee exposure when they are identified.
40. OSHA Section 1910.1030(b) states:

“Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.”
41. OSHA Section 1910.1030(d)(2)(i) states:

“Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.”
42. CDC guidance documents such as “Hospital Respiratory Protection Program Toolkit, Resources for Respirator Program Administrators” (2015) and “2007 Guideline for

Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, Last update: July 2019” provide detailed guidelines for the selection and use of respirators for healthcare workers exposure to airborne natural and manmade infectious disease hazards such as anthrax, noroviruses, monkeypox, multidrug-resistant organisms, tuberculosis, and viral hemorrhagic fevers (Lassa, Ebola, Marburg, Crimean-Congo fever viruses). CDC guidance clearly identifies the appropriate respiratory protection as the primary control mechanism to prevent or minimize healthcare workers exposures to these airborne pathogens where engineering controls and isolation are not feasible.

43. OSHA’s description of hazards associated with SARS-CoV-2 Covid-19 along with the declarations by the CDC, the President of the United States, and the New York State and City Public Health Commissioners, identify transmission through airborne means as the primary infectious pathway. The most effective Risk Mitigation Tool to prevent airborne transmission of the airborne aerosolized SARS-CoV-2 virus to healthcare employees that could result in severe Covid and death are the wearing of respirators equipped with HEPA filters (where other engineering controls and isolation measures are not feasible) that have **99.97% efficiency** in removing airborne aerosols that may include the virus that causes Covid-19 according to the Hospital Respirator Protection Program Toolkit first published May 2015 (“Respirator Guidelines”).<sup>7</sup> The use of HEPA-filtered respirator has been longer standing strategy and the highest efficacy for infection prevention and control of airborne pathogens.
44. According to the Respirator Guidelines, there are a very small number of respirator types that meet the 99.97% efficacy rate, namely, 1) the HEPA filtered air-purifying respirators (APRs) and 2) HEPA filtered Powered Air Purifying Respirator (PAPRs).

---

<sup>7</sup> See Hospital Respiratory Protection Program Toolkit published May 2015 by the U.S. Department of Labor, OSHA, CDC Workplace Safety and Health, Department of Health & Human Services, National Institute for Occupational Safety and Health (NIOSH) - <https://www.osha.gov/sites/default/files/publications/OSHA3767.pdf>

45. HEPA-filtered APRs and PAPRs have OSHA assigned protection factors greater than surgical facemasks (no assigned protection factor) with half-face APRs with a protection factor of 10 and PAPR 1,000, respectively. The combination of a tightfitting respirator seal, in the case of the APR, to minimize leakage around the face-to-facepiece seal with the HEPA filtration, provides a high degree of protection to the wearer. The PAPRs higher level of protection is based on a positive pressure around the wearer's face generated from air drawn by a pump through HEPA filters being forced into the PAPR facepiece or hood creating positive pressure. This equipment ensures any leaks or breaks around the face-to-facepiece seal or within the hood result in outward air movement away from the wearer's nose and mouth. PAPRs also provide cooling of the wearer and are more comfortable to wear over extended work shifts.
46. While the various vaccines released for use in the U.S. have been developed to reduce the symptoms of severe Covid-19 according to the CDC, they do not prevent the transmission of the airborne virus in the workplace. Under OSHA, employers have the duty to eliminate or reduce employee's exposure to the airborne hazards such as the SARS-CoV-2 virus and/or variants that cause Covid-19. OSHA's Bloodborne Pathogens Standard provides the closest analogous healthcare employment requirements for employers. Where the employer's Bloodborne Pathogen mandatory Exposure Control Plan identifies employee exposure to pathogens such as those containing Hepatitis B, the employer's duty is limited to making the Hepatitis B vaccine (which is the only reference to vaccines in the standard) available to pathogen exposed employees (not mandating the vaccine).
47. OSHA Section 1910.1030(f)(1)(i)<sup>8</sup> states:
- "The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident."

48. For all airborne pathogens, OSHA requires employers to provide the most effective controls to prevent exposure. When respiratory protection is required, the HEPA filtered PAPRs provide the highest filtration efficiency rate of 99.97% (and an OSHA protection factor of 1,000) to prevent inhalation of airborne infectious aerosol or particles that could lead infection, severe Covid-19, and death. PAPRs and supplied-air respirators are routinely worn when treating patients with more virulent infectious diseases, including viral hemorrhagic fevers (such as Ebola) that have a greater risk of causing immediate death than SARS-CoV-2 Covid-19. They are a proven and effective hazard control measure for employees.
49. Based on my knowledge of the various occupational industries like various manufacturing, allied trades such as welding, and chemical companies in the U.S. where engineering controls are not feasible and workers are exposed to highly toxic and carcinogenic chemicals, respiratory protection programs are routinely implemented to prevent worker exposures. Similarly, hospitals, biomedical laboratories, and other healthcare facilities, implement respirator protection programs as part of their infection prevention and control programs to mitigate risks of the transmission of infectious airborne aerosols that can lead to severe illness and death caused by respiratory pathogens. Therefore, respirator protection programs are feasible and demonstrated to be effective in the workplace.
50. The OSHA requirements cited are applicable to state and city governments, including New York City, through the State's OSHA Plans.

### **PRELIMINARY CONCLUSORY OPINIONS**

51. Based on my review of the foregoing facts and based on my review of the relevant applicable OSHA regulations, guidelines, and mandates along with the New York State

and City Covid-19 emergency public health laws, I make the following preliminary opinions, with a reasonable degree of certainty as a certified industrial hygienist with experience in federal and state compliance, as follows:

- a. Under OSHA, employers have the duty to furnish to each of their employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.
- b. The OSHA regulations do not require employees to prevent severe injury and death in the workplace. The regulations only require employees to be trained in the proper use and limitations of safety equipment provided by the employer to eliminate or mitigate workplace hazards.
- c. Employers have the duty to identify workplace hazards, utilize a hierarchy of controls strategy to eliminate, isolate or mitigate all workplace hazards, including airborne infectious aerosols.
- d. Employers cannot delegate its hazard identification and mitigation duties under OSHA to employees and employers must bear the cost of implementing hazard controls measures to protect employees.
- e. Employers must conduct and certify a written hazard assessment to identify hazards and the appropriate risk mitigation control for employees to minimize injury and exposure from such hazards.
- f. Where respirators are to be used to prevent exposure, employers must conduct a hazard evaluation specific to airborne inhalation hazards to select the appropriate respiratory protection for employees to prevent occupation exposures to infectious airborne aerosols, such as the SARS-CoV-2 virus.
- g. Where it is not feasible to eliminate or otherwise control the airborne hazards associated with the infectious airborne SARS-CoV-2 virus that causes Covid-19 in

a healthcare workplace with engineering or administrative controls alone, wearing of NIOSH-certified respirators such as a HEPA-equipped PAPR provides the highest-level employee respiratory protection to prevent virus transmission through inhalation and mitigate exposure from other routes of entry, such as ocular and mucous membranes, without the use of vaccines.

- h. Eliminating and mitigating the airborne transmission of SARS-CoV-2 infectious aerosols that can lead to severe Covid-19 and Covid-19 related deaths in the workplace, is clearly the employer's duty, not the employees.
- i. Although the Covid-9 vaccines can reduce the symptomology and severity of the Covid-19 infection, vaccines are not effective in preventing exposure to or inhalation of the airborne aerosolized virus in the healthcare workplace setting. Therefore, the use of effective respiratory protection such as a HEPA-filtered PAPR by healthcare workers provides the greatest level of prevention from both exposure and infection.
- j. Employees that work remotely outside of the employer workplace, who work in single worker vehicles or single worker workspaces or work outdoors and do not have contact with the public and can perform most of the essential functions of their jobs without contact with other workers, are not at risk for occupational exposure to the SARS-CoV-2 virus while performing their duties. Therefore, employer mandated vaccinations for these employees are not necessary because these administrative controls effectively eliminate exposure to the employee or other employees.
- k. Providing remote work option for employees whose jobs can be performed remotely serves as an effectively occupational exposure control. Even if the employee becomes infected and is symptomatic with Covid-19 or variants other

employees remain protected since they are not in the workplace. Remote work is a risk control that should be used to protect an employee while allowing the employee to remain on the job.

52. The statements and opinions made in this Affidavit are preliminary and I reserve the right to add to, amend or modify my opinions as more facts are provided during the course of any litigation of the claims by Plaintiffs for which this affidavit is provided.

I declare under penalty of perjury under the laws of the State of Idaho that the foregoing is true and correct.

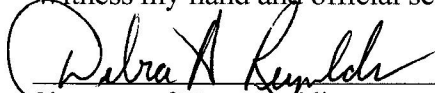
Dated this 13<sup>th</sup> day of APRIL, 2022.

  
BRUCE MILLER

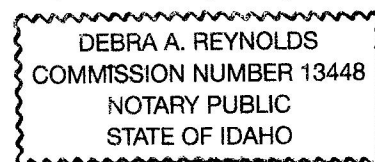
A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

Subscribed and sworn to (or affirmed) before me on this 13<sup>th</sup> day of April, 2022, by BRUCE MILLER, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Witness my hand and official seal.

  
Signature of Notary Public

[Affix Notary Seal]





# **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

## **Area of Expertise**

- Comprehensive Industrial Hygiene and Safety
- Department of Energy Former Worker Retrospective Exposure Assessments
- Expert Health and Safety Consulting Services
- Workplace Accident Investigation and Regulatory Compliance
- Microbial Investigations and Indoor Air Quality

## **Education & Certification**

- M.S., Industrial Hygiene, Central Missouri State University, Warrensburg, MO, 1993
- B.S., Industrial Technology, Southern Illinois University, Carbondale, IL, 1990
- A.A.S., Bioenvironmental Engineering Technology, Community College of the Air Force, 1988
- Certified Industrial Hygienist (CIH), American Board of Industrial Hygiene, (ABIH) #6439

## **Professional Organizations & Memberships**

- Member, American Industrial Hygiene Association (AIHA)
- Member, American Conference of Governmental Industrial Hygienist (ACGIH)
- Member, Health Physics Society (HPS)
- Associate Member, American College of Occupational and Environmental Medicine (ACOEM)

## **SUMMARY OF QUALIFICATIONS**

Mr. Miller is a board-certified industrial hygienist with more than 33 years of experience in comprehensive health and safety practice and 25 years of specialized environmental remediation and construction consulting experience at the Department of Energy (DOE), U.S. Army Corps of Engineers (USACE), and Department of Defense (DOD) clients and sites. He has managed and supervised health, safety, and health physics personnel and provided project management, planning, regulatory support, and oversight to numerous environmental remediation, waste management, construction, decontamination and decommissioning, and microbial and indoor air quality investigations, and remediation projects. He has served as an expert conducting investigations and preparing expert reports for both plaintiffs' and defendants' cases. Specialized project and legal experience researching, developing expert reports, and testifying in worker retrospective occupational exposure assessments and causation illness compensation court cases related to former defense weapons facilities and DOE national laboratories workers.

Mr. Miller has developed and implemented comprehensive health and safety programs and the supporting field documents to meet federal (DOE, DOD, USACE, Federal Aviation Authority (FAA), Department of Interior (DOI), and Homeland Security (HLS)), state, and local regulatory compliance. He has provided project management, direct health, safety, environmental, radiological field oversight of remedial investigation/feasibility study (RI/FS), remedial design/remedial action (RD/RA), construction and D&D projects at some of the most complex hazardous and mixed waste sites in the country. Projects have included large scale excavation, drilling, sampling; hurricane recovery; nuclear facility construction and demolition, and waste retrieval and characterization in radioactive and transuranic (TRU) mixed waste pits; remediation of high explosive fragment sites, and clearance of unexploded ordinance throughout the DOE Complex and numerous DOD facilities. He has broad-based experience in health, safety, and radiological regulatory compliance at national

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

DOE laboratories, DOD facilities, US Navy facilities, numerous USACE Districts, construction sites, for industrial and commercial clients. He currently serves on national committees for the American Industrial Hygiene Association (AIHA) (Past Chair/Member of the Law Committee & Member of Indoor Environmental Quality Committee member) and was a past Chair of the AIHA's Consultants Special Interest Group (SIG).

### **CURRENT AND PAST EXPERT LEGAL WORK**

***Claimant Expert – Board of Industrial Insurance Appeals, State of Washington, Employer Motions for Summary Judgement, Washington Labor & Industry Cases (February 2020 – Present)*** - Serving as an industrial hygiene expert for current, former employees, and deceased (spouse) (Claimants) of the U.S. Department of Energy Hanford Site, who have filed affirmative claims under the "Hanford Site Employees—Occupational Disease Presumption," or Washington Substitute House Bill 1723 ("HB 1723") law. These claims are being challenged by the Department of Energy. Expert services have been provided through contracts with the State of Washington Attorney General's Office (AGO) and other law offices supporting these Claimants. Work scope includes providing expert consultation, preparing declaration opinions (as needed), and testifying in discovery and perpetuating depositions and Washington State Board of Industrial Insurance hearings. Expert testimony addresses current and past exposures directly related to Claimants' presumptive claims illness or diagnosis. Specific expertise includes detailed research of worker exposures to Hanford's chemicals, hazardous agents, and radiological hazards, examination of historic industrial hygiene and radiological exposure data, interviewing claimants, reviewing medical records, occupational medical surveillance data, developing claimant-specific exposure profiles and qualitative exposure assessments, review of toxicological and epidemiological data, studies, and NIOSH cohorts for relevant exposure agents, and evaluating claimant medical diagnosis against known toxicological chemicals or radiation for specific occupation exposure causation. Mr. Miller has provided testimony in more than 50 cases.

***Defendant Expert – Case No. 4:18-cv-05189, United States of America, Plaintiff, v. State Of Washington; Jay Inslee, in his official capacity as Governor of the State of Washington; Washington State Department of Labor & Industries; Joel Sacks, in his official capacity as Director of the Washington State Department of Labor & Industries December 2018 – December 2019)*** Served as an industrial hygiene expert for the State of Washington Attorney General's Office (AGO) (Defendant), in the aforementioned case involving United States Department of Justice that has brought a suit against the State of Washington based on the enactment of a workers' compensation law, entitled "Hanford Site Employees—Occupational Disease Presumption," or Washington Substitute House Bill 1723 ("HB 1723") claiming that HB 1723 singles out and discriminates against the Federal Government. Mr. Miller provided expert consultation and rendering opinions related to the current and past exposures of Hanford workers for the AGO within the context of this lawsuit. U.S. District Court ruled against the U.S. Department of Justice in this case. The District Court decision affirming the WA State statute was appealed to the U.S. 9<sup>th</sup> Circuit Court of Appeals.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

***Plaintiff Expert - Hanford Challenge, et al. v. United States Department of Energy and Washington River Protection Solutions, No. 4:15-cv-05086 – Settlement Agreement (March 2017 – December 2019)*** Mr. Miller served as the 'Qualified Technical Person' providing technical reviews and comments of several Hanford contractor respiratory protection program documents in support of the Washington Attorney General's Office (AGO) under the Settlement Agreement with the U.S. Department of Energy. Technical reviews of numerous respirator cartridge testing reports and supporting documents (prepared by the Pacific Northwest National Laboratory on behalf of Washington River Protection Solutions as well as independent third-party consultants) were completed and comments provided the AGO. Cartridge testing was conducted to determine the ability of cartridges to effectively filter and absorb vapor and gases from the Hanford Tank Farm vapor phase at various tank wastes and to estimate cartridge service-life to develop cartridge changeout schedules. Technical reports were evaluated based on test design and chemical analysis methodology, National Institute for Occupational Safety and Health (NIOSH) respirator cartridge design and testing criteria, manufacturer's cartridge NIOSH technical approvals, and known Hanford contaminants of concern properties.

***Plaintiff Expert – Case No. 4:15-cv-05087, State of Washington, Plaintiff, v. Ernest J. Moniz, Secretary of the United States Department of Energy, the United States Department of Energy, and Washington River Protection Solutions LLC, Defendants (May 2016 – September 2018) –*** Served with a team of experts as the State of Washington Attorney General's Office (AGO) (Plaintiff) industrial hygiene expert in this case involving long standing worker exposures to tank farm vapors at the Department of Energy, Hanford Site Tank Farms. Services included review of the AGO complaint, declaration for injunctive relief, discovery documents and reports, worker exposure incidents and medical surveillance, plaintiff regulatory requirements, and contractor implementing program and procedures and other related expert reports, declarations and depositions. Researched tank farm processes and history, contractor health and safety programs, DOE, NIOSH, and Government Accountability Office inspection reports, tank farm industrial hygiene exposure assessment and characterization, industrial hygiene program and implementation, toxicological data for tank content and vapors, and nature and extent of past worker exposure events. Prepared declarations in support of the AGO's injunctive relief and supplemental preliminary injunction as well as draft expert reports. Additional support included preparing potential lines of inquiry for Defendant (Department of Energy and Contractor) health and safety experts and management personnel depositions related to worker health and safety and exposure events. Provided expertise on exposure mitigation, work process, engineering controls, personal protective equipment, respirator cartridge testing, medical surveillance, and ongoing technical expertise and support during settlement discussions with the U.S. Department of Justice.

***Defendant Expert – Case No. CV-2014-300, Danita Bachman and Clayton Snook (P) v. The Jud 2000 Trust, Eugene D. Jud and Janice A. Jud, Trustees; Cid E. Hayden and John Doe Persons or Entities I through V (D), State of Idaho, in and for the County of Lemhi (August 2015 – April 2017)*** – Served as Defense industrial hygiene expert investigating water damage and subsequent microbial growth at the Plaintiff's residence. Plaintiff asserts Defendants irrigation methods are flooding the crawlspace of the home. Conducted an investigation of the residence including visual and physical inspection, testing of building materials for moisture content, performed thermo-imaging of building materials, and collected air samples for laboratory analysis to quantify types of

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

mold spores present; reviewed Plaintiff's expert's report and methodology and prepared lines of inquiry for Defendant counsel use during Plaintiff expert's deposition; prepared and submitted expert report with opinions to Defense counsel. Testified at trial as Defense expert for nature and extent of water damage and mold growth, sources of water damage and mold growth and required remediation for reoccupancy.

***Plaintiff Expert - Case 4:15-cv-00165-EJL, Ralph Stanton (P) v. Battelle Energy Alliance (D), U.S. District Court, District of Idaho (February 2015 – October 2015)*** – Served as Plaintiff safety and health expert examining nature of accident and exposure of workers to plutonium contamination at the Zero Power Physics Reactor facility located at the Department of Energy, Idaho National Engineering Laboratory. Reviewed all relevant radiological, safety and industrial hygiene data and procedures; operational procedures and work packages; prepared lines of inquiry for deposition of Defendant key management and technical staff; reviewed deposition transcripts and supported Plaintiff counsel during and following depositions. Served as the technical manager and prepared the scope of work for radiological survey of Plaintiff's home by third party and analysis of all samples collected. This case was settled prior to the completion of my expert report and opinions, deposition or expert testimony.

***Defendant Expert - Case No. 4:10-CV-184-EJL, Roy Santo (P) v. Acuity Brands Lighting, Inc; Lon Ricks Electric, Inc. (D), United States District Court for the District of Idaho*** – Served as Defense safety and health expert for the construction accident case involving a fall from a ladder resulting in a severe laceration from an exposed metal light fixture resulting in a permanent disability. Reviewed nature of the accident and conducting an accident investigation and multiple root causal analysis based upon available records and photos. Analysis consisted of reviewing all available accident reports and witness statements; Occupational Health and Safety Administration construction regulatory review of applicable standards including multi-employer worksites; ladder manufacturer's use and limitation; Plaintiff's and Defendant's witness's deposition review; and developed lines of inquire for Defendant counsel for Plaintiff deposition. Prepared expert report with opinions and submitted to Defense counsel. This case was settled prior to my being called as an expert to offer my opinions for deposition or at trial.

***Plaintiff Expert - Case No. CV-09-4235, Scherr & Scherr, LLC (P) v. Kirk Wolfe (D), District Court of the Seventh Judicial District of the State of Idaho in and for the County of Bonneville*** – Served as Plaintiff industrial hygiene expert in case involving construction defects and latent damage caused by water damage to Plaintiff's professional building during construction. This expert work followed a water damage and microbial assessment of the Plaintiff's building (The Sleep Institute). Expert analysis on the nature and extent of the water damage was conducted. Analysis included a complete review of my previously microbial assessment and report; review of the construction timeline and material storage practices on site; analysis of the weather condition at the time of the construction activities where building materials were not enclosed; comparative water damage analysis with other assessments that I had conducted. My expert report was prepared and submitted to Plaintiff counsel. This case was settled prior to my being called as an expert to offer my opinions at deposition and trial.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

***Plaintiff Expert – Case No. CV-06-275, Sherry Fuqua V. Paul Olsen dba Paul Olsen Trucking; Paul Olsen, Individually; Marion Jerry Weaver, and John Does I-V, District Court of the Fifth Judicial District of the State of Idaho, in and for the County of Blaine*** – Served as Plaintiff safety and health expert examining nature of an industrial work accident involving the Plaintiff who was a driver for the Defendant. Plaintiff was atop a truck when another driver moved the vehicle causing the Plaintiff to be dragged then thrown from the truck against a wall. A comprehensive review of Defendant's accident investigation, records and photos was conducted; Defendant trucking and operational facility procedures reviewed; training and other human resources records for the Plaintiff reviewed; fall restraint and other safety device manufacturer's use and limitations literature analyzed; and an accident root cause analysis developed. Additionally, lines of inquiry for Defendant witness depositions were prepared and discovery item requests submitted to Plaintiff counsel for consideration. This case was resolved before the expert report and opinions were completed. No expert deposition or testimony was given in this case.

***Defendant Expert – Hymas v. Rockwell Homes, Inc., United States District Court for the District of Idaho*** – Served as Defendant safety and health expert for the construction accident case involving a fall of a worker from an elevated platform onto a piece or exposed rebar at a residential construction site resulting in an injury. Case involved multiple construction contractors, subcontractors and staffing agency that the Plaintiff worked through. A review of all available accident records, medical information, and photos was conducted; construction contracts were reviewed for terms and conditions and areas of responsibilities/oversight at the site; and applicable Occupational Safety and Health Administration Construction Regulations were reviewed and workplace requirements for fall protection identified. Lines of inquiry for the Plaintiff witnesses were prepared and an outline of the expert report was drafted. Prior to the expert report and opinions submittal date, this case was settled. No expert deposition and testimony was given in this case.

***Third Party Expert – Farm Bureau Insurance Company, Pocatello, Idaho*** – Conduct an expert review and evaluation of the restoration of a water damage claim, subsequent mold growth, and area remediation conducted at a private residence in Idaho. The insured alleged that mold spores were released during the preliminary water and mold restoration activities and migrated to their occupied areas resulting the mold spore contributed negatively to the Insured's health. Mr. Miller prepared a expert report with opinions based on a site visit to the insured residence, inspection of the home and interview with insured; review of the adjuster's case file, field notes, and interview; interview with the water and mold restoration contractor; interview with the project industrial hygienist and review of their report; and review of the air, swab, and bulk microbial sampling data contained within the industrial hygienist report. All opinions were provided in my expert report. No deposition or court testimony was taken.

### **RELEVANT EXPERIENCE**

**President, Health and Safety Services, LLC**  
**Idaho Falls, ID**  
**2013 - Present**

Responsible for day-to-day operations and marketing services for Health and Safety Services, LLC (HSS) which is focused on providing high-quality expert health and safety consulting services to

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

clients. Primary HSS technical consulting services consist (1) Health and Safety Compliance and Consulting - compliance, inspections, violation mitigation and corrective actions, and development of regulatory complaint programs and policies; (2) Worker and Area Exposure Assessments - development of occupational exposure assessments in compliance with AIHA Exposure Assessment methodology including evaluation of exposure groups, engineering controls, work procedures, and personal protective equipment usage. This generally includes conducting exposure monitoring or sampling to document exposures and provide defensible exposure data as required by OSHA; (3) Expert Consulting and Report Writing - provide health and safety legal expert consulting and prepare expert reports for cases involving worker injuries and exposures, accidents and regulatory compliance matters; (4) Expert Testimony - serve as a testifying health and safety expert for cases involving worker injuries, exposures, accidents and regulatory compliance matters typically following expert consulting and report writing services. HSS specializes in expert case consulting in matters involving worker accidents, occupational exposures, retrospective exposure assessments, injuries and OSHA compliance and has represented both plaintiffs and defense in cases.

**President, North Wind Solutions, LLC**  
**North Wind Group**  
**Idaho Falls, ID**  
**February 2011 – April 2013**

As President, Mr. Miller provided vision and leadership by identifying new clients, business lines, and opportunities and ensuring that all work is carried out in a professional, technically complete manner. He served as the single point of contact with the Small Business Administration (SBA) and is responsible for developing and approving all business plans, joint venture agreements, and SBA 8(a) program compliance. He supervised project managers and met directly with clients to ensure all technical and contractual deliverables were completed on schedule and within budget. Mr. Miller ensured that operations of NW Solutions meet the philosophy, mission, strategy, and business goals and objectives of the North Wind Group. He ensured that corporate policies and programs related to health and safety, quality, procurement, contracts, and human resources are implemented on a daily basis and provided quarterly operational reports. Under Mr. Miller's leadership, North Wind Solutions grew from a startup to successful SBA 8(a) certified firm with a second SBA certified 8(a) Joint Venture with a combined backlog of more than \$12M in less than two years. Additionally, he was responsible for obtaining an Alcohol, Tobacco, Firearms and Explosives (ATF) explosive license and served as the corporate Responsible Person for the ATF license responsible to ensure all employee possessors purchasing, storing and handling explosives were compliance with ATF regulations and license requirements.

**Sr. Vice President, Corporate Health, Safety and Security; Facility Security Officer**  
**North Wind Group and all subsidiary companies**  
**Idaho Falls, ID**  
**February 2009 – February 2011**

Served as the corporate point of contact for health, safety and security matters for the North Wind Group and 6 subsidiary companies consisting of over 400 employees working from 18 offices throughout the US and with revenues exceeding \$100M annually. Reported to the President of the North Wind Group and developed and implemented all health, safety and security programs and

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

procedures, tracked and report performance metrics and took correction actions where needed to improve performance. Under Mr. Miller's leadership, the North Wind Group and subsidiary companies maintained an experience modification rate (EMR) well below their industry averages, obtained and maintained two OSHA Voluntary Protection Program (VPP) STAR sites, was awarded the OSHA VPP Star among Stars award, and was successful at having several years with zero OSHA recordable or lost-time injuries.

As the Facility Security Officer (FSO), Mr. Miller controlled all aspects of the North Wind Group and subsidiary Department of Defense and Department of Energy facility security clearances including developing all security and operational security plans, maintaining government contractor required security databases, facilitating new subsidiary company and personnel clearances, and interfacing with government agency security and counter-intelligence/terrorism counterparts during audits and program oversight to ensure compliance with security regulations.

### **Vice President, Corporate Health and Safety Director**

**North Wind, Inc.**

**Idaho Falls, ID**

**February 2004 – February 2009**

Developed and maintained all corporate health, safety, and radiological programs; reviews and approves project health and safety plans and procedures for all North Wind Group Companies including natural and cultural resources, remediation, treatment, construction, demolition projects and operating facilities. Health, safety and security lead for 18 North Wind offices and provide direct support to projects in all North Wind Group geographic locations. Worked with workers compensation policy holder, professional organization, OSHA VPP Program office and remediation industry H&S professionals to ensure all programs provided for an effective safety culture and corporate H&S goals are met. Supported strategic planning, teaming and proposal development, project management, and served as a technical resource for internal and external customers. Provided expert consultant and witness industrial hygiene and safety services and testimony for attorneys regarding accidents, exposure assessments, microbial/IAQ, safety issues and other health and safety related cases.

He has written procedures, conducted training, and established medical surveillance programs to control exposure to radionuclides, heavy metals (arsenic, asbestos, beryllium, cadmium, chromium, lead), mercury, and solvent contaminants in compliance with OSHA substance standards at uncontrolled hazardous waste sites. Project sites have included waste pits/trenches, contaminated soils and underground storage tanks, mine tailing piles, landfills, drummed hazardous waste, UXO/MEC, radioactive structures and piping, and radioactive and mixed (hazardous/radioactive) waste and debris locations throughout the US for the DOE, US Air Force, US Coast Guard, US Army, NAVFAC, USACE, commercial, and private clients.

# CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

## PAST MAJOR PROGRAMS & PROJECTS

***Program Consultant, HSS, LLC – North Wind Solutions, LLC for the U.S. Navy, Space and Naval Warfare Systems Command (SPAWAR), SPAWAR Systems Center Pacific, Marine Mammal Program (MMP), San Diego, CA (2013)*** – Served as the program consultant to transition program manager responsibilities to new program manager. Facilitated client and staff meetings, reviewed program operations metrics and budgets, provided budgeted staffing levels and recommended changes to increase efficiency. Additionally, wrote the North Wind Dive Safety Manual and developed all Dive Plans/Dive Hazard Analysis for all topside and underwater dive operations to meet requirements of OSHA 29 CFR Subpart T, Commercial Diving requirements. Developed fiscal year end program metrics to Navy client demonstrating all contractual performance objectives were met or exceeded with zero change orders or client concerns.

***Corporate Sponsor/Program Manager – U.S. Navy, Space and Naval Warfare Systems Command (SPAWAR), SPAWAR Systems Center Pacific, Marine Mammal Program (MMP), San Diego, CA (2012-2013)*** – Developed the technical and cost proposal and served as chief negotiator to secure this \$6M+ 3-year firm fixed price contract to serve as the construction and maintenance contractor for the Navy's MMP. Program included constructing, maintaining, and cleaning mammal enclosures and associated docks and platforms, storage sheds, and support MMP operational buildings. Routine diving and boat operations were required to maintain MMP locations throughout the San Diego Bay area. Additional responsible for emergency and requested maintenance of two additional MMP locations in the Pacific Northwest and South Atlantic regions. Developed all operational operations metrics, budgets, and conducted oversight to ensure client requirements and MMP animal safety requirements were met. Developed new dive program, dive medical surveillance protocol, upgraded all dive gear, created new maintenance database, and improved dive efficiency through better scheduling and coordination of dive tasks with MMP personnel. Exceeded all contractual performance metrics with zero safety incidents while exceeding project profit target.

***Project Health and Safety Manager - U.S. Department of Homeland Security, United States Coast Guard, Base Support Unit, Pier 36, Building 3, Seattle, WA (2012)*** – Served as project health and safety manager and principal certified industrial hygienist to provide direct support and oversight of lead paint removal and encapsulation of the Pier 36, Building 3, a single-story warehouse structure constructed in 1930 with a footprint of approximately 200,000 ft<sup>2</sup>. The \$15M contract required extensive scaffolding erection (large area scaffolding spanning approximately 12,000 ft<sup>2</sup> for each area abated with levels 4 through 6 greater than 50 feet high). A negative pressure HEPA-filtered lead abatement containment was constructed over existing occupied office and command facilities to isolate personnel and allow for continuous operations during media blasting, cleaning and encapsulation of lead-based paint located on building metal trusses, asbestos corrugated roofing and walls. Extensive air sampling and continuous ventilation pressure monitoring of containments was conducted to provide objective evidence to USCG Command and occupants that lead control work area containment integrity and controls were functioning adequately during their occupancy. All work was completed with zero OSHA recordable injuries and all lead exposures to abatement workers and outside containment were well below the established occupational exposure limits.



## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

***Project Health and Safety Manager – U.S. Department of Energy (DOE), Idaho National Laboratory (INL), Pit 10 Accelerated Retrieval Project (ARP) VII Nuclear Facility Design/Build Construction Project (2010-2011)*** – Served as project health and safety manager responsible for preparation of all health and safety documentation to meet DOE requirements for the \$17M design and construction of a retrieval enclosure structure to be used to remediate transuranic mixed waste located in the Subsurface Disposal Area of the Radioactive Waste Management Complex at the INL. Facility was constructed as a Category 2 nuclear facility. Health and safety documentation including 10 CFR 851, *Worker Safety and Health Program*, Integrated Safety Management System, Construction Safety Plan, Hoisting and Rigging Plan, and all work packages and associated Job Safety Analysis in compliance with Occupational Safety and Health Administration (OSHA) 10 Code of Federal Regulation (CFR) 1926, *Construction* standards. Additionally, responsible for developing and overseeing all medical surveillance requirements, served as the North Wind representative for all INL site stabilization agreements and collective bargaining associated with trade unions workers that were direct hired by North Wind for construction.

***Project Manager/Lead Investigator – U.S. Army Corps of Engineers, Savannah District, Air Sampling Analysis for Mold Prevention Technology Demonstration Project, Ft. Gordon, GA (2009-2010)*** - Served as Project Manager/Lead Investigator evaluating two ventilation system treatment technologies (UV light and hydrogen peroxide) installed to destroy airborne biological contaminants in multiple HVAC air handling units serving Army Barracks where Warriors in Transition (service members from Operations Enduring Freedom and Iraqi Freedom injured in combat who are transitioning back to civilian status). Study consisted of conducting a series of five rounds of air sampling (baseline and 4 quartering rounds) for microbial contaminants using culturable media (MEA and GD18) and non-viable spore traps up and down streams of the return air HVAC treatment units in two barracks, two control barracks, and outdoor background locations to determine speciation and count for vegetative and non-vegetative of fungi. Additionally, HVAC parameters such as particle counts, air flow, temperature, relative humidity, CO<sub>2</sub> and percent fresh air are being measured for each HVAC air handling unit and branches are being measured. The final report and results were used for the selection of the preferred HVAC treatment system technology throughout the Army Engineering Command Southeast District.

***U.S. Department of Homeland Security, United States Coast Guard (USCG), Integrated Support Command, Kodiak Air Station, AK (2008 – 2012)*** - Served as health and safety manager and lead industrial hygiene technical consultant for multiple task orders at the Kodiak, Alaska USCG station and USCG facilities in Seattle, WA. Projects completed included asbestos and lead based paint remediation projects of barracks, dining facilities, and other common areas; lead contaminated soils characterization and removal; installation of a vapor recovery extraction system in barracks/common area crawlspaces to mitigate groundwater chlorinated solvent contaminants; conducting IAQ study of occupied barracks and common areas to define military/patron risk; remediation and demolition of housing, surplus USCG facilities, and contaminated areas.

Prepared all hazardous materials abatement plans, oversight of CIH conducting asbestos Phase Contrast Microscopy (PCM for occupational) and Transmission Electron Microscopy (TEM for area clearance) air sampling, approved all asbestos and lead abatement plans, and write technical project reports summarizing hazardous materials abatement and clearance of common areas.

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

Provided industrial hygiene technical consulting for the design, installation and commissioning and balancing of multi-building vapor intrusion remediation systems to place crawlspaces under negative pressure (with respect to occupied areas above) to eliminate ground water contaminant trichloroethylene (TCE) and perchloroethylene (PCE) vapors from entering barracks and common areas above. Conducted commissioning testing and balancing of all ventilation system components and all associated baseline and post-commissioning indoor air studies using EPA Method TO-15, Volatile organic compounds (VOCs). Prepared technical memorandums for USCG summarizing air study results and supported USCG with technical discussions with U.S. EPA Region 10 related to military occupant/patron risk and reoccupancy.

***Technical Consultant – U.S. Department of Energy, Office of River Protection (ORP), Hanford Site, WA (2009)*** – Provided a technical compliance and Independent Government Cost Estimate (IGCE) evaluation and report of the Washington River Protection Solutions (WRPS) 10 CFR 850, Chronic Beryllium Disease Prevention Program (CBDPP): Final Rule implementation cost submittal to DOE Office of River Protection (ORP). This WRSP CBDPP compliance review and costs estimate was developed for the Hanford Tank Farm Beryllium Program to align all programmatic elements with the Hanford Sitewide CBDPP. IGCE was developed using engineering assessments, cost estimating relationships, vendor quotes, and technical basis for differing CBDPP element costs approaches. All assumptions and methodology were provided in the final report to DOE ORP.

***U.S. Department of Homeland Security, United States Coast Guard, Integrated Support Command, USCG Kodiak Air Station, AK (2008-2012)*** - Served as health and safety manager and lead industrial hygiene technical consultant for multiple task orders at the USCG station Kodiak Island, Alaska. Projects completed included asbestos and lead based paint remediation projects of barracks, dining facilities, and other common areas. Prepared all hazardous materials abatement plans, oversight of CIH conducting asbestos phase contrast microscopy (PCM) occupational and transmission electron microscopy (TEM) clearance air sampling, approved all asbestos and lead abatement plans, and writing technical reports summarizing hazardous materials abatement and clearance of common areas. Provided industrial hygiene technical consulting for the design, installation and commissioning and balancing of multi-building vapor intrusion remediation systems to place crawlspaces under negative pressure (with respect to occupied areas above) to eliminate TCE and PCE vapors from entering barracks and common areas above. Conducted commissioning testing and balancing of all ventilation system components and all associated baseline and post-commissioning indoor air studies using EPA Method TO-15 for volatile organic compounds (VOCs). Prepared technical memorandums for USCG summarizing air study results and supported USCG with technical discussions with U.S. EPA Region 10 related to military occupant/patron risk.

***Program Health and Safety Manager – Bureau of Land Management, Hazardous Materials Emergency Response Contracts (State of Utah and Idaho), statewide locations (2004 – 2012)*** - Served as the health and safety manager developing all programmatic H&S documents and approving all project-specific Health and Safety Plans, prescribed medical surveillance and monitoring, OSHA 29 CFR 1926 regulatory interpretations, and provided oversight for all emergency and planned remediation actions conducted under these state-wide contracts. Projects completed included emergency response to numerous spills and illegal dump sites. Planned

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

responses have included reclamation of mine sites, illegal asbestos dump sites, contaminated structures and heavy metal mine tailings, and the safe demolition and closure of BLM structure and mine adits.

***LANL Environmental Program Support – Department of Energy, Los Alamos National Laboratory, NM (2006-2010)*** - Provided technical project support services for numerous task orders issued under North Wind, Inc's master service contract with Los Alamos National Security, LLC (LANS). Prepared Environmental Program-Wide Environmental Safety and Health Plan and project specific Site Safety and Health Plans to meet the requirements of 10 CFR 851, Worker Safety and Health Program and 29 CFR 1926.65, HAZWOPER, respectively. Projects included, TA-21 ISS tritium component removal, LANL Baseline Industrial Hygiene Exposure Assessment, Industrial Hygiene Support for LANL Beryllium Project, TA-54 Performance Assessment and Low-Level Waste Operations, and LANL Master Drilling Contract.

***Program Health and Safety Manager – Bureau of Land Management, Anvil Points Remediation Project, Rifle, CO (2008-2009)*** - Served as the health and safety manager and providing ongoing technical project support to removal of over 200,000 cubic yards of spent oil shale tailings and placement in a North Wind design/build repository. Prepared and approved Site-safety and health plans, developed area and personal air sampling strategies, directed medical surveillance, and provided engineering controls to minimize airborne and contact exposure to arsenic, lead and PAH contaminants associated with shale tailings as well as buried asbestos transite piping. Provided safety oversight and direction for mine adit closure and construction of 70,000 cubic yards of spent shale yard in an engineered repository.

***Beryllium Decontamination and Demolition Project – Former American Beryllium Company, Sarasota, FL (2008)*** - Served as the project certified industrial hygienist (CIH) for Environmental Dimensions, Inc for the decontamination and demolition of portions of the former American Beryllium Company. This project was being conducted for Lockheed-Martin Corporation (LMC). Primary activities included reviewing/revising the project health and safety plan, developing exposure assessments for personnel conducting decontamination tasks, reviewing all personal and area air sampling data, interacting with the LMC and community advocates to communicate beryllium exposure and airborne controls and to facilitate understanding of the health controls to ensure no releases to the adjacent housing areas.

***Program Health and Safety Manager, Sustainment, Restoration, and Modernization Task Order Contract (SATOC), U.S. Air Force Civil Engineering Support Agency, Worldwide (2005-2010)*** – Served as the Health and Safety Manager for all SATOC task orders. Prepared, reviewed and approved all site safety and health plans; subcontractor safety programs and plans, and H&S-related technical submittals; oversaw all H&S compliance; performed program H&S audits and inspections; supervised and provided technical guidance to all assigned field site safety officers; determined/oversaw medical surveillance requirements; served as subject matter expert for all H&S issues and compliance. Projects on-going or completed have included:

- Charleston AFB, SC – Runway/Taxiway Replacement and Upgrades- \$28M
- Malmstrom AFB, MT – Mechanical System Upgrades/Replacement - \$3M

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

- Holloman AFB, NM – Various civil projects – \$6M
- Moody AFB – Lighting and ECIP Installation - \$1.9M.

***Former Hanger 6 Site Characterization and Remediation, U.S. Army Corps of Engineers-Alaska District, Fort Wainwright, Alaska (2006-2007)*** - Mr. Miller served as the Health and Safety Manager and USACE Program Certified Industrial Hygienist performing various airborne volatile, semi-volatile, metals, and chemical warfare agent compounds sampling during soil disturbance, liner installation, and excavation of potentially contaminated soils at the former Hangar 6 site located at Fort Wainwright, Alaska. All work was conducted in Level B (supplied air/chemical resistant clothing) and included personal, perimeter (project fence line), soil gas, and direct reading air monitoring was conducted to gather chemical source and exposure data used to further evaluate potential construction worker reported symptoms who were excavating soil at the former Hangar 6 site in July 2006.

Area and personal air samples were collected and analyzed in accordance with selected National Institute of Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) Toxic Organic (TO) Compendium Method TO-15, and Laboratory Modified NIOSH methods.

Direct reading instruments (including a photoionization detector [PID] with an 11.7 eV lamp, flame ionization detector [FID], and MSA HAZMATCAD Plus [material chemical agent detector/chemical warfare agents] were calibrated and operated in accordance with the manufacturer's operating instructions. All air and soil gas sampling and direct reading monitoring of workers was performed by the Mr. Miller.

***Beryllium Hazard Assessment - DOE National Engineering Technology Laboratory, Albany, OR (2006-2007)*** – Served as the project technical lead for the development of a beryllium hazard assessment for the DOE National Engineering Technology Laboratory Albany Research Facility located in Albany, OR. Scope of services include a comprehensive review of existing DOE NETL Albany CBDPP; review existing occupational exposure assessment process and procedures; review and assessment of the current baseline beryllium inventory; review and assessment of existing and ongoing Beryllium facility characterization including wipe, bulk and air sampling; statistical analysis of characterization and personal exposure data utilizing left-censored statically modeling approaches such as "R"; development of similar exposure groups and hazard ranking of these groups and specific operational areas; preparation of the written hazard assessment to provide a quantification of beryllium as a health and safety hazard as it relates to the NETL-Albany site and its operations; updating the existing NETL Albany CBDPP; and certification of the hazard assessment by a third party accredited/certified board.

***Project Health & Safety Manager, Rocky Mountain Arsenal Projects, Denver, Co (2005-2007)*** – Served as Health and Safety Manager for multiple projects at the Rocky Mountain Arsenal site in Denver, CO under contract with Tetra Tech EC, Inc. Developed and approved all Task-specific Health and Safety Plans (THASPs), determined PPE and medical surveillance, personal and areas monitoring, site s controls, and other requirements for degraded chemical warfare agents and other hazardous materials requiring level D-Level B PPE. Representative projects have included well sampling, well installation and abandonment, at various Lime Basins project sites. Met OSHA

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

VPP STAR requirement for all site activities.

***LMAES Structures and Equipment Dismantlement and Disposal (Pit 9 Facilities D&D), DOE Idaho National Laboratory, ID (2005-2007)*** - Served as the Corporate Health and Safety Director and project ES&H oversight for the D&D of all LMAES structures (Retrieval Building, Remediation Treatment Facility, and all tanks, piping, and equipment located in and around the facilities) and equipment located within the Radioactive Waste Management Complex Pit 9 Subsurface Disposal and Administrative Areas. Demolition methods included deconstructing the retrieval building to relieve stress on structure; physical demolition of the concrete RTF using a combination of wrecking ball, tracked excavator with shears and processors; and shearing, sizing, and processing structures in the administrative area. Project involved significant hoisting and rigging of large (100') steel structural members and equipment as well as handling and hauling of demolition debris. Mr. Miller was responsible for writing the integrated Safety Management System (DEAR 970.5223-1, "Integration of Environment, Safety and Health into Work Planning and Execution"), Contractor Assurance System (DOE Order 226.1), Project Health and Safety Plan, and preparing North Wind prime contractor 10 CFR 851, Worker Safety and Health Program for DOE-ID approval. All contractually required plans were submitted and approved within contractually defined schedule.

***Hurricane Damaged Facility Demolition and Reconstruction, U.S. Air Force AFCEE Worldwide Environmental Restoration and Construction (WERC), Various Gulf Coast Bases (2005-2007)*** - Served as the project health and safety manager for several projects totaling \$15M involving structure demolition and debris removal, reconstruction, and renovations at Hurlburt Field Air Base in Ft. Walton Beach, FL and Keesler Air Force Base (AFB), Biloxi, MS a result of Hurricanes Ivan, Dennis and Katrina. These projects were performed under NWI's US Air Force (USAF) WERC contract and NWI served as the general contractor. Mr. Miller has prepared the health and safety plans and specifications other for all projects that have included a wastewater treatment plant, marina, construction of a bridge, and renovation of the USAF Special Forces headquarters building. Additionally, Mr. Miller was onsite at Keesler AFB in Biloxi, MS within 10 days following Hurricane Katrina performing water damage assessments of multiple base facilities, assisted in the preparation of demolition workplans, prepared project health & Safety plans, and specifications for remediation contractors.

***FWA-102 (Taku Garden) Site Characterization and Remediation, U.S. Army Corps of Engineers-Alaska District, Fort Wainwright, AK (2005-2006)*** - Served as the project health and safety manager and NWI Alaska Division Manager overseeing several Stryker Brigade projects at Ft. Wainwright located in Fairbanks, AK from April 2005 through December 2006. Projects included site characterization to delineate the extent and nature of PCB and other hazardous materials and unexploded ordinance (UXO) at a 52-acre construction site where legacy military hazardous materials were discovered through initial soils screening and excavation tasks. Mr. Miller has prepared all accident prevention plans, site safety and health plans, worker and area exposure monitoring plans, developed engineering controls to ensure no off-site releases to adjacent residential areas, and approved all munitions of concern (MEC)/UXO support plans. Project activities included surface geophysical studies (GPR, EM-31, EM-51); surface and subsurface soil sampling (direct push); installation of temporary and permanent water monitoring wells; field

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

screening with polychlorinated biphenyl (PCB) assay kits; excavation of test pits and trenches; stockpile sorting for MEC/UXO and associated UXO and scrap disposal; handling, repacking and sampling of excavated waste drums; PCB contaminated soil handling and transportation; and comprehensive worker, resident, and area exposure monitoring. This scope of work also included two additional sites where UXO and known and unknown soil contaminants have been found. Project tasks were conducted in Level D, C and B personal protective equipment.

***Hurricane Katrina Damage Assessments, Demolition and Reconstruction, U.S. Air Force Center for Environmental Excellence (AFCEE), Worldwide Environmental & Construction (WERC) Contract, Kessler AFB, MS (2005-2006)*** – Served as the health and safety manager for this \$12M+ project and task lead for all damage assessments. North Wind is providing turnkey damage assessments, demolition and reconstruction services of facilities and grounds in response to hurricane Katrina damage at Keesler Air Force Base (AFB), located in Biloxi, Mississippi under North Wind's the US Air Force Worldwide Environmental Restoration and Construction (WERC) contract. North Wind mobilized to the base within 3 days in response to a Government notice to proceed and conducted damaged assessments of several facilities and base grounds. Mr. Miller served as the lead for all water damage and mold assessments of occupied and abandoned structures performing visual inspections of all buildings, thermal imaging of building surfaces, taking moisture meter measurements of building materials, and delineating all materials to be remediation through each structure. He also prepared all asbestos and mold remediation specifications for all water damaged and mold affected building materials including containment requirements, remediation protocols, structural drying, and post-remediation assessment criteria. In addition, Mr. Miller prepared all project health and safety plans (HASP) and specifications for each scope of work that addressed all project activity hazards, hazard mitigation, and contingencies associated with facility demolition and reconstructions as well as grounds remediation. Demolition and reconstruction scope included the Keesler AFB marina and associated facilities, security building, contracting building, dormitories, NCO billeting building, debris and stump removal and repair/replacement of various docks. He oversees all safety and health officers assigned to the project. *All project work was completed without a single recordable or lost time injury.*

***U.S. Army Corps of Engineers, Nationwide Remediation Services (2004-2008)*** – Prepared all health and safety plans and served as Program CIH for North Wind U.S. Army Corps of Engineering projects in the Sacramento, Savannah, Omaha, Mobile, and Alaska Districts. Projects include remediation of contaminated release sites; installation, operations and maintenance of vapor extraction systems; construction projects; and investigation of unexploded ordinance/ordinance and explosive (UXO/OE) sites including remote USACE formerly used defense sites (FUDS) located on Alaskan Aleutian Islands and St. Lawrence Island.

***In Situ TRU Waste Delineation and Waste Removal at Hanford 618-10/618-11 Burial Grounds, DOE Hanford, WA (2004-2007)*** - Served as Project Health and Safety Manager – Major Project Lead for DOE-HQ Environmental Management, Technology Development and Deployment Program In Situ TRU Waste Delineation and Waste Removal at DOE Hanford, Washington 618-10/618-11 Burial Grounds. The project goal is to identify, develop, and demonstrate technologies to support accelerated Hanford site remediation. DOE fabricated fuel for the Hanford Site nuclear production reactors in the 300 Area that produced large volumes of many types of radioactive wastes,

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

including transuranic (TRU) wastes that were disposed on in trenches and vertical pipe units (VPUs). North Wind has developed VPU retrieval technology that is being demonstrated as a proof-of-principal in a cold testing facility prior to applying this technology to the 618-10/18-11 Hanford Area. Work to date has included preparation of all work plans, health and safety plans, test plans, and procedures necessary to conduct full scale cold testing of a large diameter casing driven by a pile driver to over core and retrieve the simulated VPU. In addition, development and field testing of surface geophysical technology and downhole nuclear logging methods are being tested to verify the technology for hot operations. The final project Phase II task will be to retrieve radioactive materials containing VPU from the Hanford 618-10/618-11 area.

***Los Alamos National Laboratory, DOE TA-73 Airport Landfill Closure Project, Los Alamos, NM (2004-2006)*** – Prepared comprehensive safety and health plan for Los Alamos National Laboratory TA-73 airport landfill RD/RA closure project. Project included conducting large scale excavation of closed landfill, retrieving debris and waste from a steep slope located approximately 100-ft above the Pueblo Canyon valley with a drag line and excavation equipment. Final fill and grading cover requirements will meet voluntary consent order RCRA Subtitle C landfill requirements. The entire landfill area was regraded. Additionally, all heavy equipment operations were conducted adjacent to the active Los Alamos County Airport runway. Health and safety procedures and plans have been prepared to be compliant with DOE O 441, 29 CFR 1910.120 HAZWOPER, 29 CFR 1926, Construction, and relevant FAA requirements.

***Kadlec Hospital DOE Building 748 Decontamination and Decommissioning Project, DOE Richland, WA (2004-2005)*** - Served as the Project Health and Safety Manager – Major Project Lead for D&D of the Kadlec Medical Center DOE Building 748 (Emergency Decontamination Facility) located adjacent to the Kadlec Medical Center in Richland, Washington. Contract scope included preparation of all work plans, demolition plan, health and safety plan, and final characterization sampling and analysis plan (prepared in accordance Multi-Agency Radiation Survey and Site Investigation Manual [MARSSIM]); removal and decontamination of radiologically contaminated equipment and surfaces to meet DOE Order 5400.5 (Radiation Protection of the Public and the Environment) release requirements; characterization, removal, and packaging for transportation of hazardous materials and waste (lead, mercury, PCBs, creosote, tritium); and abatement of friable and nonfriable asbestos containing building materials. North Wind used a track excavator equipped with various buckets, specialized shears, and processors to demolish and size above grade concrete structure and piping, excavate of buried sumps, tanks, ductwork and remove underlying contaminated soils. Building 748 facility was located within 75 feet from the hospital surgical suite and is adjacent to the emergency entrance. All demolition tasks were completed with minimal impact to the ongoing Kadlec Medical Center operations.

***Operable Unit 1-10 (V-Tanks) and CERCLA Soil Area Decontamination and Decommissioning Project, Idaho National Engineering and Environmental Laboratory, ID (2004)*** - Prepared all health and safety documentation including site-specific health and safety plans (HASP), job safety analysis (JSA), technical procedures, and hazard screening checklists for this D&D project that consisted of removal, transfer, and treatment of PCB contaminated radioactive liquid and sludges from underground tanks, piping systems, and vaults located at Test Area North at the Idaho National Engineering and Environmental Laboratory (INEEL).

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

***U.S. Army Yuma Proving Ground, Yuma, AZ (2004)*** – Provided all health and safety oversight for the U.S. Army Yuma Proving Ground investigation and remediation of 600-acre range area. The area was used for range practice, demolition activities, open detonation, and open burning of explosive ordinance. Unexploded ordinance (UXO) consisted of live rounds, submunitions, anti-personnel mines, and ordinance and explosives elements were nitrocellulose, TNT, RDX, and other nitrogen-based explosives.

***SWSD TRU Waste Container Retrieval, DOE Hanford, WA (2004)*** – Provided procedure development, technical approach, and safety support services to Fluor Hanford, Inc. management in support of transuranic (TRU) container retrieval operations at the Hanford Solid Waste Storage and Disposal (SWSD) area. Services include review and revision of operating procedures for TRU container retrieval operations, container handling, and special handling for deformed, damaged, and breached containers. Included safety approach and contingencies for container handling and retrieval.

***White Sand Missile Range (WSMR) Operational and Safety Services, Las Cruces, NM (2004)*** – Provided safety and health technical services to BAE Systems, Inc at the DOD White Sand Missile Range (WSMR). Services include reviewing and revising the site-wide health and safety documentation, preparing multimedia inspection criteria, conducting compliance safety and health audits of operational, support, and tenant facilities. Continued periodic support of the High Energy Laser Test Facility (HELSTF) with respect to operational safety issues is also being provided.

### **President/Principal Technical Consultant**

**Vortex Enterprises, Inc**

**Idaho Falls, Idaho**

**December 1998 – February 2004**

Wrote and reviewed safety analysis reports, hazards assessments, health and safety plans, and other related safety programs for government and commercial clients. Managed and supervised industrial hygiene (IH), safety, and health physics personnel and provides project management, planning, regulatory support, and oversight to numerous Department of Energy (DOE) environmental restoration, waste management, construction, and decontamination & decommissioning (D&D) projects. Provided expertise in health, safety, and radiological engineering and hazard controls. The DOE project listed above including onsite investigations, evaluations, and risk assessment studies. Conducted hazard/OSHA 1910 (General Industry) and 1926 (Construction) regulatory compliance assessments and develop strategies/products to resolve deficiencies and enhance programs. Served as the project manager, field team leader, and health and safety officer for drilling, remedial investigations, removal actions, construction, site investigations and D&D projects. Mr. Miller provided project management and direct nuclear operations, industrial hygiene, safety, environmental compliance, and radiological field oversight for remedial investigation/feasibility study (RI/FS), remedial design/remedial action (RD/RA), and radiological D&D projects. In addition to DOE projects, he provided health and safety services for construction, private industry remediation projects, and water damage and microbial investigations.

***Water Damage and Microbial Assessments and Investigations (1998-2004)*** - Specialty project investigative work conducting water damage and microbial assessments for residential,



## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

commercial, insurance company, hotel and medical facility clients. Conducted investigative assessments utilizing physical inspection methods such as moisture meters, infrared thermal imaging camera, indoor air quality (IAQ) parameter meters, laboratory air samples for viable and non-viable fungi, bioaerosol sampling, and particle counters. Prepared assessment reports that included detailed remediation specifications and protocols in accordance with industry standards and conducted post-remediation assessments to ensure all remediation protocol requirements were met. Served as water damage and microbial consulting expert, wrote expert reports and was a speaker at the 2004 National Mold Symposium in Las Vegas, NV.

***Bechtel BWXT Idaho, LLC (BBWI) Management and Technical Services (1998 – 2004)*** – Provided technical and management support services to Bechtel BWXT Idaho, LLC (BBWI) at the Department of Energy Idaho National Engineering and Environmental Laboratory (INEEL). Mr. Miller's support included serving as the project field team leader (FTL) and health and safety officer (HSO); writing Health and Safety Plans (HASPs), detailed technical procedures, system operability (SO) test procedures, and operational test plans. Ensuring project compliance with DOE Order 5480.19 Conduct of Operations, OSHA Voluntary Protection Program (VPP), Integrated Safety Management Systems (ISMS), nuclear facility operational training requirements, and related safety analysis documents. Served as the FTL for numerous site investigation, remediation, technology development/deployment, and testing at transuranic (TRU) mixed waste subsurface disposal areas. Participated as member of technology design team and lead field activities for all BBWI/DOE readiness assessments for start-up and implementation of new field Category 2 nuclear operations as described below.

**OU 7-10 Glovebox Excavator Method Project (2003-2004)** – \$90 million dollar project involved remote excavation and retrieval of TRU mixed Rocky Flats Plant waste drums and debris in OU 7-10 (Pit 9) located in the Subsurface Disposal Area (SDA) at the Radioactive Waste Management Complex (RWMC). Provided key health, safety and nuclear operational expertise including writing the comprehensive operational health and safety plan; evaluation of engineering controls; development and implementation of a test plans for cold and hot (radiological) operations, detailed operating and SO test procedures for a full-scale excavation mockup facility and OU 7-10 "hot" operations at the Pit 9 category 2 nuclear facility; wrote numerous facility system startup procedures (ventilation system, dust suppression system, air emissions system, and CCTV system); preparing all job hazard analysis for cold and hot operations and incorporated hazard mitigation steps into operating procedures; drafted all decontamination and dismantlement procedures (retrieval confinement structure (RCS) Fogging, RCS and packaging glovebox system (PGS) Housekeeping, Grouting the Waste Pit, RCS and PGS Characterization, Immobilizing Residual Contamination, and Decontamination of the RCS and PGS); and developed emergency plan contingencies for this state-of-the-art remote TRU mixed waste retrieval facility. The Glovebox Excavator Method Project was successfully completed eight months ahead of the enforceable regulatory milestone date.

**Operable Unit 7-13/14 Integrated Probing Project (IPP) (2002-2004)** - Project involved sonic drilling, sampling, and retrieval of TRU mixed waste samples buried in pits and trenches within the Subsurface Disposal Area (SDA) at Radioactive Waste Management Complex (RWMC). Mr. Miller prepared comprehensive Health and Safety Plans (HASPs) for cold tests and all OU 7-13/14 IPP

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

“hot” (buried radioactive material areas) operational activities. Served on design team developing specialized exposure monitoring, engineering controls (HEPA drill string enclosure, and glove bags), and work practices designed to mitigate TRU mixed waste hazards. Presented health, safety, and exposure mitigation strategies to state of Idaho, DOE and EPA Region 10 regulators. Prepared detailed technical operating procedures and served as the Field Team Leader (FTL) for first-of-a-kind sonic drill rig installation of probes (lysimeters, tensiometers, vapor ports, visual, and moisture) within the TRU waste pits to obtain data related to radiological and organic contaminants and source term migration and transport. Served as the FTL for nuclear logging of probes (radioactive Cf source and neutron generator), core drilling and retrieval, glovebag sampling of installed instrumented probes (including developing the radionuclide source term for shipping of the leachate samples), extensive surface geophysical studies, and diffraction tomography. Additionally served on engineering design team developing the second-generation instrumented probes. All document submittals for regulatory (DOE-ID/HQ, EPA-Region 10, and IDEQ) and project reviews were ahead of the project schedule and within or below the contractually defined budget.

Mr. Miller provided continuous technical and management services to Bechtel BWXT, Lockheed-Martin Idaho Technology Company and Parsons Infrastructure and Technology Group for the Operable Unit 7-10 (Pit 9) and Operable Unit 7-13/14 IPP projects 1998 - 2004.

***Advance Mixed Waste Treatment Project (AMWTP), British Nuclear Fuels Ltd, DOE Idaho National Engineering and Environmental Laboratory, ID (2000-2001)*** – Provided industrial hygiene expertise to British Nuclear Fuels Ltd. (BNFL), Inc. for the \$400 million dollar Advance Mixed Waste Treatment Project (AMWTP) located at the DOE Idaho National Laboratory (INL). Served as the consulting CIH for industrial safety and hygiene programs during the retrieval, treatment, and disposal of more than 65,000 cubic meters of transuranic (TRU) mixed waste at this CERCLA site. Project activities include large scale excavation of clean overburden soils, retrieval of 55-gallon drum, boxes, and other TRU stacked waste containers, chemical and radiological screening and assaying of each container, transportation to processing facility, and size reduction (compaction) of containers for final shipment to repository. Focus areas of technical support included development of the personnel and area exposure assessments; sampling strategy for beryllium, heavy metals, silica, physical hazards; and oversight of the chronic beryllium disease prevention program (10 CFR 850). Additional support and oversight was provided in the areas of respiratory protection, atmospheric monitoring and testing, statistical analysis of exposure monitoring data, and supervision of staff industrial hygienists. Provided on-site management support services during DOE HQ Operational Readiness Review (ORR) and follow-up DOE-HQ ORR verification to resolve technical issues related to exposure assessments.

***Industrial Hygiene Laboratory Audit (2000)*** - Conducted comprehensive laboratory audit of DataChem Laboratories Industrial Hygiene laboratory facilities and procedures (Salt Lake City, UT Lab) for BNFL, Inc. Prepared audit criteria based on AIHA LQAP; DataChem SOPs, IHQAP, QAPP, 29 CFR 1910.1450, 10 CFR 20, and previous audit findings. Generated detailed summary report with findings, conditions adverse to quality, and recommendations.

***In-Situ Grouting (ISG) Project Comprehensive Sampling (2002)*** – Conducted all geotechnical and chemical analysis sampling for the In-Situ Grouting (ISG) project demonstration at the Idaho

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

Engineering and Environmental Laboratory (INEEL) Radioactive Waste Management Complex (RWMC). Sampling included all geotechnical cylinder (compressive strength) and rare earth tracer samples associated with the high-pressure jet grouting of like-TRU waste forms at the RWMC study area. Samples were collected from the drill string, thrust blocks, drill string decontamination liquid, waste streams and high-volume air samplers placed around the high-pressure jet grouting rig to determine the extent and nature of potential TRU contamination via the rare earth tracers. Following a high-pressure grout pump failure, participated in the DOE Type B investigation to determine the root cause and contributing causes of pump failure focusing on the safety aspects.

***INEEL CERCLA Disposal Facility Construction Health and Safety (1999)*** - Prepared Health and Safety Plan for the INEEL CERCLA Disposal Facility (ICDF) Operations. The HASP presented the systematic approach to identify and control ICDF operational hazards related to facility processes in accordance with 29 CFR 1910.120 (HAZWOPER) Treatment, Storage, and Disposal facility requirements.

***(Private Client) Highly Flammable Material Sort, Segregate, Repackage, and Disposal Project (1999)*** - Conducted sorting, segregating, repackaging, and destructive preparation, and transportation activities for over 15,000 55-gallon drums of highly flammable nitrocellulose product at private client facility. Prepared a Site-Specific Safety and Health Plan, conducted detailed project-specific hazard-based training for workers, established engineering controls, personal protective equipment requirements, and monitoring requirements to ensure worker protection during handling, storage transport, and sizing operations.

***DOE Pantex Plant Burning Ground Characterization and Remediation Project (2003)*** - Served as the decontamination and decommissioning (D&D) radiological task manager and health and safety officer for the remediation of high explosive and radiologically contaminated soil area at the DOE Pantex Plant, Burning Grounds Site, Amarillo, TX. Provided all radiological services including conducting in-progress, post excavation, and confirmation radiological surveys. Conducted all confirmation sampling in accordance with Multi-Agency Radiation Survey and Site Investigation Manual (MARSIMS) requirements. Approximately 300 yards of contaminated soil were excavated and loaded in roll-off bins for disposal within an expedited schedule resulting in early site closure.

***In-Situ Grouting and In-Situ Vitrification Demonstration Projects (2002)*** – Prepared health and safety plans for the Idaho National Engineering and Environmental Laboratory (INEEL) In Situ Grouting (ISG) and In-Situ Vitrification (ISV) project demonstrations at the Radioactive Waste Management Complex (RWMC).

***DOE Argonne West Cask Tunnel D&D Project (1999)*** - Developed industrial hygiene program and performed comprehensive air sampling and sound level evaluation in support of the Cask Tunnel Decontamination & Decommissioning (D&D) project located at the Idaho National Engineering and Environmental Laboratory (INEEL), Argonne West reactor facility. Air sampling was conducted for beryllium and respirable silica dusts and noise dosimetry/octave band analysis was performed during concrete and rock demolition tasks being conducted with a remotely operated hydraulic ram (Rubble Maker) to evaluate D&D worker exposures.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

***(Commercial Client) Glovebox Fabrication Lead Brick Exposure Assessment (2002)*** - Performed air sampling and engineering control evaluation of glovebox lead brick cutting and fabrication facility. Compliance to OSHA Lead Standard (29 CFR 1910.1025) and respiratory protection standard (29 CFR 1910.134) was evaluated and ventilation system efficiency examined. Submitted comprehensive report with recommendation for improving engineering controls, work practices, and ventilation efficiency to reduce worker lead exposures in accordance with OSHA Lead Standard.

***Yuma Proving Ground Open Burn/Open Detonation Project (1999)*** - Wrote comprehensive health and safety plan (HASP) for the OB/OD Burn Pad Soil Excavation project at the Department of the Army, Yuma Proving Ground (YPG), Yuma, AZ. Project involved excavation and characterization of soils areas contaminated with residue from explosives (TNT/high explosives) and propellant burning operations. This HASP included a comprehensive lead medical surveillance program and other specialized training requirements associated with YPG explosive site operations.

***DOE INEEL Construction Subcontractor Services (1998-2003)*** - Provided full range of industrial hygiene and safety consulting services to INEEL construction subcontractors conducting facility upgrades, new facility construction, and D&D activities. Expertise in 29 CFR 1910 (General Industry) and 29 CFR 1926 (Construction) regulatory requirements provided. Additional services included, conducting industrial hygiene exposure assessments, serving as competent person for excavation, consulting on OSHA substance-specific standards, and conducting full-period exposure monitoring for airborne contaminants such as metals, silica, asphalt fumes/emission constituents, and other organic compounds in compliance with National Institute for Occupational Health and Safety (NIOSH) analytical methods.

***Expert Consultant and Witness Services (200-2004)*** - Provided expert consultant and witness industrial hygiene services and testimony for attorneys regarding exposure assessment and other health and safety related cases.

**Corporate Health and Safety Director**  
**S.M. Stoller Corporation**  
**Boulder, CO - Idaho Falls, ID Office**  
**February 1995 – December 1998**

Wrote all corporate health, safety, and radiological programs; wrote and implemented health and safety plans for remediation and decontamination and decommissioning (D&D) projects; prepared technical proposals/costs/teaming agreements; and presented technical approach for Stoller proposal team during formal government contracting proposal oral presentations. Served as Corporate H&S technical manager for projects and offices throughout the U.S. and represented Stoller at national remediation and D&D conferences. While serving as the Corporate Health and Safety Director, Stoller had zero recordable injuries/illnesses and no lost time injuries even while conducting complex large-scale excavation, remediation, and radiological D&D projects.

***DOE Pantex Plant Remediation and Health and Safety Services (1997-1998)*** - Served as the environmental, Safety and health (ES&H) manager for two large scale environmental remediation

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

projects at the DOE Pantex Plant. Health and Safety Plans (HASPs) were prepared for both the Accelerated Clean-up Activities (ACA) of chemically contaminated sites and Phase III of the decontamination and decommissioning (D&D) of Firing Site 5 (depleted uranium contaminated site and structures) projects. Mr. Miller prepared submittal to meet all technical requirements for large scale excavations, radiological D&D, high explosives handling, and other hazards analysis for approval by Pantex Environmental Restoration (ER) technical representatives. Served as the task manager for much of the Firing Site 5 characterization and D&D including, conducting U.S. Nuclear Regulatory Commission (NUREG) radiological surveys, excavation of contaminated soils, and demolition of existing structures to meet unrestricted release criteria of DOE Order 5400.5 and Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) site closure requirements.

***DOE INEEL Investigative-Derived Mixed Waste Sampling, Sorting, and Repackaging Project (1996-1997)*** - Served as subcontractor project manager (PM) and FTL for waste management facilities investigative-derived waste (IDW) sampling and repackaging at the Idaho National Engineering and Environmental Laboratory (INEEL). Project involved characterization, sorting, lab packaging of low-level and mixed radioactive waste. Work was performed in airborne radioactivity, radiation and contamination areas in Level C and B personal protective and anticontamination equipment. More than 200 waste streams and 3,000 samples were sorted, treated, repackaged, and lab packed for shipment to on/off-site TSD facilities for further treatment and/or disposal. No contamination migration or events occurred due to excellent radiological control work practices and rigorous implementation of conduct of operations.

***DOE INEEL Waste Management Services (1996)*** - Served as subcontractor PM and FTL for several waste operations facility mixed waste projects. Projects included characterization of the ash following a critical burn campaign at the Idaho National Engineering and Environmental Laboratory (INEEL) Waste Experimental Reduction Facility (WERF) and “decompaction” of a WERF low-level waste bin to locate and remove a mixed waste container and conduct characterization of the surrounding waste. Tasks were identified as “critical” by the contractor and DOE facility managers based on meeting regulatory milestones and involved direct regulator participation. These tasks were conducted in Level B (supplied air) anticontamination personal protective equipment inside of high radiological contamination areas and airborne radioactivity areas. All tasks were successfully accomplished in a timely manner with no contamination migration. This allowed WERF to restart nuclear operations with minimal down-time and meet EPA regulatory milestones.

***DOE Rocky Flats Plant T-1 Trench Remediation Project (1995)*** - Provided technical support to Stoller team performing Level B protective equipment remediation and repackaging activities at T-1 Trench at the DOE Rocky Flats Plant, Golden, Colorado.

***DOE Pantex Plant Firing Site 5 Radiological Characterization and D&D Project (1997-1998)*** - Served as the Health and Safety Manager and assistant Project Manager for the DOE Pantex, Firing Site 5, Depleted Uranium (DU) cleanup project to meet DOE Order 5400.5 (Radiation Protection of the Public and the Environment) and Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) site closure requirements. Wrote several health and safety plans for different phases of this project, developed job hazard analysis, and provided health, safety, and radiological oversight for all project tasks. This project required obtaining more than 250,000 radiological

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

surface readings with board mounted radiation detectors and collecting of more than 1,000 surface and subsurface soil samples for analysis. Once the site was fully characterized, over 13,000 cubic feet of DU radiologically contaminated soils and fragments were excavated with trackhoes, the two remaining FS-5 structures (shot pad and concrete bunker) were surveyed, contaminated concrete scabbled (18 ton shot pad removed), and the remaining clean bunker structure demolished in place.

***DOE Pantex Plan High Explosive/Radiation Remediation Project (1997)*** - Served as the Health Safety Manager for the Pantex High Explosive/Radiation (HE/RAD) sites remediation project. Wrote all health and safety required documents including, health and safety plan, task hazard analysis, high explosive fragment handling procedures, decontamination plans, and site-specific training requirements. Project involved remediation of soils contaminated with high explosives (HDX, RDX, TNB and TNT) and heavy metals.

***DOE Pantex Plant Ditches ICM Remediation Project (1997)*** - Served as the Health and Safety Manager for the Pantex Ditches Interim Corrective Measures (ICM) remediation project. Wrote the health and safety plan, job hazard analysis, and related documentation for the work plan. More than 5,500 surface and subsurface soil samples were collected and over 22,000 separate analysis conducted by the on-site mobile analytical laboratory. Following contamination delineation, more than 400,000 cubic feet of contaminated soil was excavated at depths to 30+ feet and hauled from the sites for disposal at a hazardous waste landfill.

***DOE INEEL Legacy Waste Management Project (1996-1997)*** - Served as a principal participant in the dispositioning of more than 1,845 legacy samples (in approximately four months) and 147,747 pounds of bulk legacy waste to the appropriate Idaho National Engineering and Environmental Laboratory (INEEL) or off-site EPA-permitted treatment, storage and disposal facility as part of the technical team providing support to Lockheed-Martin's Environmental Restoration Department. Project included providing turn-key services to characterize, sort, and package waste and samples; waste management; writing hazardous waste determinations; entering all shipping data into the INEEL IWITS shipping system; coordinating the shipment of legacy samples and waste; dispositioned samples back to the area of contamination; and creating close-out files to document each sample of waste "Lot" disposition action to meet EPA regulatory requirements. Additionally, performed solidification of low-level waste streams using cement to stabilization prior to shipment to the INEEL Radioactive Waste Management Complex (RWMC) facility in accordance with INEEL radiological waste acceptance criteria requirements.

***DOE EINEEL CFA OU 4-17 and OU 4-42 Site Characterization and Remediation Project (1996)*** - Served as the subcontractor project manager and field team leader (FTL) providing technical support services to Parsons Infrastructure and Technologies Group during the removal actions at the CFA Operable Unit (OU) 4-17/47 and OU 4-42 petroleum contaminated sites. Services included: conducting field screening of contaminated soils using PetroFlag™ immunoassay screening kits to provide "real time" evaluation of cleanup activities, writing Sampling and Analysis Plan document and revisions to meet changing field requirements, and preserving, packaging, shipping all samples to meet 48-hour analysis requirements. Additionally, collected over 100 laboratory confirmation samples ensure excavation of contaminated soil met the risk-based corrective action (RBCA) goals.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

***DOE INEEL WAG 4 Comprehensive Remedial Investigation/Feasibility Study Project*** - INEEL Served as the subcontractor Project Manager (PM) and field team leader (FTL) for Waste Area Group (WAG) 4 comprehensive Remedial Investigation/Feasibility Study (RI/FS) activity. This project included sampling of over 600 surface and subsurface soil locations using hand augering, drilling, and trenching methods to meet RI/FS data requirements. Analysis for hazardous and radiological analytes was conducted. Responsible for all aspects of drilling subcontracting, sample collection, packaging and shipment of analytical samples. Although the scope of work was increased by approximately 20% midway through the project, the project was still completed two weeks ahead of schedule and under the original budget.

***DOE INEEL CFA-04 Mercury Retort Sampling Project (1996)*** - Provided technical support to Parsons Infrastructure during the pumping and transport of 18,000 gallons of mercury contaminated water and sludge at the Central Facilities CFA-04 Mercury Retort site and direct field sampling support for characterization of Waste Area Group 4 Time Critical Removal Action at the Operable Units CFA-13, CFA-15, CFA-42, and CFA-47 sites at the Idaho National Engineering and Environmental Laboratory.

***DOE INEEL In-situ Grouting Soil Isolation Project (1995)*** - Served as the subcontractor project manager providing sampling and analysis support, laboratory statement of work development, waste management, health and safety support, and training services for the Soil Isolation Project (Cold Test Pit and Acid Pit) at the Idaho National Engineering and Environmental Laboratory (INEEL). A patented in-situ stabilization technology was used to inject high-pressure grout in buried waste to create a permanent stabilization form for radioactive and hazardous (mixed) waste located in the RWMC Acid Pit. Mr. Miller collected all contamination control samples including - high volume air samples, swipe samples of the drill string and thrust block surfaces, grout returns, project waste streams, decontamination water, and HEPA filter system. All samples were collected, preserved, packaged and shipped within the analytical holding times and shipped to one on-site and five off-site laboratories.

***DOE INEEL RWMC Acid Pit Sonic Drilling Project (1995)*** - Served as subcontract project manager for sonic drilling and coring of a Tech™ grout stabilized subsurface monolith at the Idaho National Engineering and Environmental Laboratory (INEEL) Acid Pit (Operable Unit 7-13/14). The "Soilcrete" monolith was created using a high-pressure jet grout injection method to stabilized subsurface metal, organic and radiological contaminants. Responsible for conducting all core logging, drill steel decontamination, characterization and subsampling of cores, packaging and shipping analytical samples, and waste management tasks.

### **Technical Leader, Industrial Hygiene**

**Lockheed-Martin Idaho Technologies Company (LMITCO)**

**Department of Energy, Idaho National Engineering and Environmental Laboratory**

**Idaho Falls, Idaho**

**October 1994 -February 1995**

Directed staff of six industrial hygienists and three health and safety technicians supporting environmental restoration, waste management, and decontamination and decommissioning (D&D) activities at the Idaho National Engineering and Environmental Laboratory (INEEL). Managed department industrial hygiene programs and budgets, served as cognizant industrial hygiene

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

professional on all document review committees, LMITCO subject matter expert for 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation ensuring federal and DOE regulatory compliance. Represented the INEEL at national hazardous waste conferences, DOE-HQ working groups, technical issue teams, and HAZWOPER committees. Served on ad hoc environmental safety and health committees, that developed “fast track” health and safety procedures as requested by executive management.

### **Technical Leader, Industrial Hygiene**

**EG&G Idaho, Inc.**

**Department of Energy, Idaho National Engineering Laboratory Idaho Falls, Idaho**

**February 1994 -October 1994**

Same position description as with Lockheed-Martin Idaho Technologies Company with the following additions: Drafted first model (template) Idaho National Engineering Laboratory (INEL) environmental restoration (ER) health and safety plan (HASP) to meet 29 CFR 1910.120, HAZWOPER regulatory requirements that was used by the ER Group and subcontractors for all INEL Remedial Investigation/Feasibility Study (RI/FS), Remedial Design/Remedial Action (RD/RA), and decontamination and decommissioning (D&D) projects. Developed and delivered ER and D&D hazard-specific HAZWOPER training course to workers, field team leaders, and project managers. Participated on DOE-Wide HQ Chemical Vulnerability Assessment evaluating chemical vulnerabilities throughout the DOE complex. Wrote sections of final report and recommendation for mitigating potential chemical vulnerabilities throughout the DOE complex.

### **Senior Engineer**

**EG&G Idaho, Inc.**

**Environmental Restoration & Waste Management Department (ER&WM)**

**Department of Energy, Idaho National Engineering Laboratory**

**March 1993 - February 1994**

**Idaho Falls, Idaho**

Recognized, evaluated, and controlled all physical, chemical, and biological hazards resulting from environmental restoration (ER) and decontamination and decommissioning (D&D) projects at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites on the Idaho National Engineering Laboratory. Conducted risk assessments of mixed hazardous waste (chemical and radiological) sites, designed engineering controls and process modifications to minimize worker exposures, determined all personal protective equipment requirements for project tasks, developed strategies for state-of-the-art personnel and area monitoring in mixed waste environments, authored and served as technical reviewer and editor for all project health and safety documentation, and approved work control documents (safe work permits, hot work permits, construction permits, etc.). Mr. Miller directly supported D&D projects at the following facilities: Test Area North (TAN) Operable Units 1-04, 1-05, 1-10, Radioactive Waste Management Complex (RWMC), Test Reactor Area (TRA), Chemical Processing Plant (CCP), Auxiliary Reactor Area (ARA) I/II/III, Special Power Excursion Reactor Test (SPERT) IV, Power Burst Facility (PBF), and Waste Area Group (WAG) 10 site-wide projects.



## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

**Director, Technical Services, Bioenvironmental Engineering**  
**United States Air Force (USAF), 509th Operations Group, 509th Medical Group**  
**Whiteman Air Force Base, Missouri**  
**January 1992 -March 1993**

***B-2 Stealth Bomber Industrial Hygiene Director*** - As the 509 B-2 Stealth Bomber Program industrial hygiene director, reviewed Title I/II facility designs and conducted comprehensive occupational health evaluations of 20 new aircraft maintenance and support facilities housing 1,400 workers. Performed risk assessments on all hazardous processes and materials including unique B-2 bomber “skin” composite material exposures and attended USAF toxicological workshops on stealth technology exposures and thermo-degeneration (fire) constituents. Developed all new aircraft composite exposure monitoring programs and provided medical surveillance recommendations to Aerospace Medicine Commander and ensured implementation of new engineering controls.

***Base Radiation Safety Officer*** - As the base radiation safety officer, controlled all aspects of comprehensive base radiological protection program in accordance with U.S. Air Force and Nuclear Regulatory Commission (NRC) requirements. Conducted ionizing and non-ionizing radiation surveys (industrial, medical x-ray, special nuclear material, sealed sources, radar, and laser) and ensured compliance with two NRC radioactive material licenses. Established and managed base radiation protection program requirements (ALARA goals, training, etc), and monitored whole body, extremity, and neutron doses of more than 50 radiation workers in 7 exposure areas through base dosimetry program. Briefed 509th Operations Group Base Command on Radiation Safety Program.

***Special Projects Manager*** - Served as Bioenvironmental Engineering unit advisor and trainer for industrial hygiene technical matters. Conducted risk assessments to identify teratogenic reproductive hazards for all pregnant workers on base and provided duty restrictions to attending physician. Directed all high-profile occupational incident and illness investigations (radon, radiation exposures, asbestos, indoor air quality, surgical suite HVAC problems, tuberculosis quarantines, bioaerosol issues, and carcinogenic aircraft composite constituent studies). Worked with Chief of Aerospace Medicine to determine occupational exposure medical surveillance and monitoring requirements.

**Director, Industrial Hygiene Section, Bioenvironmental Engineering**  
**United States Air Force, 509th Operations Group, 509th Medical Group**  
**Whiteman Air Force Base, Missouri**  
**March 1991 - January 1992**

Planned, implemented, and monitored adequacy of comprehensive occupational health program supporting 90 industrial facilities, 40 missile launch sites, and 2 reserve bases. Scheduled and assigned workload for five industrial hygiene technicians. Coordinated all environmental and special projects studies (air, soil, water, noise, radiation, asbestos, ventilation). Managed several base programs including, respiratory protection, hazard communication, confined space, and radiation dosimetry. Served with occupational physician on Occupational Health Exposure Committee, which established medical surveillance and biological monitoring requirements for more than 3,000 workers. Reviewed plans and hazardous materials requests for environmental

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

and health directives compliance, determined hazard codes for carcinogen product usage, handling and disposal requirements, evaluated engineering controls, and recommended personal and area exposures.

**Manager, Industrial Hygiene Section, Bioenvironmental Engineering**  
**United States Air Force, 52<sup>nd</sup> Tactical Fighter Wing, 52<sup>nd</sup> Aerospace Medical Group**  
**Spangdahlem Air Force Base, (West) Germany**  
**November 1987 - March 1991**

**Industrial Hygiene Section Manager** - Scheduled and prioritized industrial hygiene evaluations and special projects for 130 industrial facilities and 3 support bases. Assigned workload to four industrial hygiene technicians and managed human and technical resources to ensure its timely completion. Conducted special surveys and incident and accident investigations and wrote summary reports. Directed training and prepared technical guidance for implementation of base occupational exposure programs (asbestos, hazard communication, risk assessments, respiratory protection). Tracked on-site and off-site environmental monitoring status on database and determined sampling priorities, strategies, and appropriate methods. Researched toxicology of highly hazardous products and substituted less toxic products for use. Served on base disaster response team (aircraft and weapon accidents, chemical and fuel spills, and fire incidents). Negotiated with local German union representatives regarding use of protective equipment and exposure monitoring requirements for base construction trades activities.

**Industrial Hygienist** - Conducted baseline, annual, and special occupational health evaluations of aircraft fabrication, maintenance, launch, weapons, radar, communication, vehicle maintenance, allied construction trades, welding, and medical center facilities. Collected exposure data, updated workplace and medical exposure casefiles. Prepared occupational workplace summary reports for the 52<sup>nd</sup> Medical Group flight surgeon and base medical director addressing engineering controls, protective equipment adequacy, chemical exposure risk assessments, ergonomics, and overall USAF, OSHA, and EPA directive compliance.

**Emergency Response Team** - Served as member of base emergency response team, which advised on-scene commander on establishing toxic corridors, health hazards, required protective equipment, and environmental impact from spills, aircraft accidents, weapon incidents, and special nuclear material loss or releases including determining radiation stay times, tracking radiological doses, and measuring fallout to establish radiation and contamination boundaries.

**Wartime Duties** - Wartime duties consisted of providing all nuclear, biological, and chemical (NBC) exposure monitoring to base commander and medical director during North Atlantic Treaty Organization (NATO) and U.S. Air Force Europe attacks in theater, establishing duty station at 2<sup>nd</sup> echelon hospital, and deployed wartime locations. Served on 2<sup>nd</sup> echelon hospital decontamination team decontaminating patients arriving at hospital, performed unexploded ordinance (UXO) sweeps following conventional warfare attacks, utilized chemical warfare agent (CWA) monitoring kits following chemical attacks, and performed all radiological monitoring and stay-time calculations following nuclear device detonations or radioactive fallout.

# CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

## ***Professional Development and Training***

Attended more than 80 American Industrial Hygiene Association (AIHA) professional development course (PDCs) (continuing education) for American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH) certification maintenance. Course in industrial hygiene, , exposure assessment, and other technical courses have completed annually since 1993 in the fields of construction safety, accident investigations, medical surveillance, exposure modeling and banding, biostatistics, epidemiological studies, occupational exposure limit adjustment, remediation technology and engineering, microbial and bioaerosol investigations, legal and expert witness/testimony, Biosafety Level 3 laboratory assessments and practices, and other industrial hygiene and safety related topics. A complete list of PDC courses completed is available upon request.

### Department of Energy-Specific training includes -

- DOE Radiological Worker I & II Instructor (Mr. Miller was a DOE RW I & II Training instructor to DOE and contractors at the DOE Idaho National Laboratory)
- DOE Radiological Worker II
- Nuclear Criticality Safety
- Radiological Glovebag Installation, Inspection, and Use
- DOE Conduct of Operations and Maintenance
- OSHA 40-Hour HAZWOPER (with 8-hour refresher courses)
- OSHA HAZWOPER Site Supervisor
- OSHA Confined Space Entrant, Attendant, and Job Entry Supervisor
- Respirator Qualification Training (APR and supplied air)
- Medic 1<sup>st</sup> Aid/CPR
- HAZMAT General Awareness (DOT Sample Shipping)
- EPA CERCLA/RCRA TAA and SAA Inspections
- OSHA Institute - Indoor Air Quality Investigations

### U.S. Air Force Training includes but not limited to:

- Industrial Hygiene Advanced Topics, USAF School of Aerospace Medicine
- Radiological Health Physics Course, USAF School of Aerospace Medicine
- Bioenvironmental Engineering Technician Course, USAF School of Aerospace Medicine.

## ***Presenter and Instructor Courses***

- Course Developer and Instructor: AIHA Professional Conference on Industrial Hygiene (PCIH) 2010, *WS-4 Mock Trial: Multi-employer Work Site*, Dallas, TX October 11, 2010.
- Arranger, Moderator, Presenter: American Industrial Hygiene Conference and Exhibition (AIHce 2009), Round Table - *249 Mock Trial: Liability Issues for the Industrial Hygienist*, June 4, 2009,

# CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

Toronto, Canada.

- Presenter: AIHce 2008, Round Table - *209 Mock Trial: Meth Lab Cleanup*, June 2, 2008, Minneapolis, MN.
- Course Developer/Instructor: AIHA Teton Local Section Professional Development Conference, *OSHA Multi-Employer Worksite Compliance*, December 9, 2005, Idaho Falls, ID.
- Speaker: Advanced Perspectives in Mold Prevention & Control: *Crafting Professional Judgment for Assessment & Remediation Approaches to Varying Occupancies/ Building Types* (November 7-9, 2004 Riviera Hotel and Casino, Las Vegas, Nevada)
- Course Developer and Instructor: 2004 Idaho Governor's Health and Safety Conference Mold Investigation and Remediation, University of Idaho, Pocatello, ID.

## Other Specialties/Experience

Extensive experienced in operation of multiple industrial hygiene, environmental, and radiological monitoring and sampling instruments and equipment.

- Air/Direct Reading: personal and area air samplers, multi-gas meters, PID, FID, IR, photo-acoustical analyzer, portable GC, aerosol, thermal anemometer (ventilation), optical and laser particle counters.
- Environmental Media Characterization: conductivity/turbidity/dissolved oxygen/pH meters, coliwasa, bailers, environmental immuno-assay/ kits, soil augers (split, core, sludge, tube), liquid sampling pumps.
- Radiological Instruments: *Ionizing Instruments* - ion chambers, GM, scintillation, proportional counters, panoramic survey meter, *Non-Ionizing instruments* - infrared, radio frequency, radar, laser energy measurement instrumentation.
- Physical Hazard Monitoring: Noise meters/dosimetry, heat stress (WBGT), ergonomic stressors, vibration, infrared thermoimaging.
- Microbial Investigation/Sampling/Remediation: Culturable and nonculturable air sampling methodologies; collection of microbial specimens through direct tape lift, bulk sampling, dust collection; invasive inspection methods using borescopes, wall samplers; noninvasive inspection methods using non/penetrating moisture meters, infrared thermoimaging cameras, relative humidity measurements. Preparation of remedial specifications including establishing containment and decontamination areas, removal protocols, pre- and post-remedial sampling, and HVAC assessments.

## Hardware and Software Capabilities

- Skilled in the use of Internet ES&H resources (toxicological registries and databases, exposure modeling, statistical exposure analysis, modeling, and program development)
- Proficient with various software packages (EXEL, WORD, Power Point, ACCESS, exposure modeling) and their applications for occupational and environmental hygiene.

## Professional Organizations

- Past Chair, Committee Member, American Industrial Hygiene Association (AIHA), Law Committee

## CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

- Past Chair, Member, AIHA Consultants Special Interest Group
- Committee Member, AIHA Indoor Environmental Quality Committee
- Past Committee Member, AIHA Environmental Affairs Committee
- Member, American Industrial Hygiene Association.
- Member, Health Physics Society
- Associate Member, American College of Occupational & Environmental Medicine.

### ***Security Clearance (previously held)***

- Department of Energy (DOE) “Q” Clearance
- Department of Defense “Top Secret” Clearance)

### ***Work History***

2013 – Present: Health and Safety Services, LLC

2011 – 2013: North Wind Solutions, LLC

2009 – 2011: North Wind Group

2004 – 2009: North Wind, Inc.

1998 – 2004: Vortex Enterprises, Inc.

1995 – 1998: S.M. Stoller Corporation

1994 – 1995: Lockheed Martin Idaho Technologies Company

1993 – 1994: EG&G Idaho, Inc.

1991 – 1993: U.S. Air Force (USAF), Bioenvironmental Engineering, Whiteman Air Force Base, MO

1987 – 1991: USAF, Bioenvironmental Engineering, Spangdahlem Air Force Base, Germany

### ***Publications***

- DOE Report, "Chemical Safety Vulnerability Working Group Report," DOE/-0396P, September 1994 – as member of US DOE-HQ Chemical Safety Vulnerability Working Group.
- B.P. Miller, *Engineering Design File - OU 7-10 Staged Interim Action Phase II Respiratory Protection Requirements*, EDF-ER-171, July 6, 2000.
- Numerous Detailed and Standard Operating Technical Procedures (TPRs), project plans (PLNs), list (LST) documents, and Test Plans for DOE prime contractors at the INL (see list below).
- Numerous Health and Safety Plans for characterization, remediation, D&D, and treatment projects at DOE, DoD, BLM, and USACE facilities (see projects below).
- Sampling and Analysis Plans for private sector clients including matrices such as sand blasting media, hazardous sludges, petroleum contaminated soils, microbial, fungal, groundwater, etc.
- More than 200 microbial investigation and remedial specification documents for microbial affected residential, commercial, and industrial structures.
- B.P. Miller, 1992, Central Missouri State University Library, Department of Safety Science and Technology Technical Reference, *Radiological Hazards: Evaluation and Control*.

# CURRICULUM VITAE – BRUCE MILLER, M.S., CIH

## Partial List – Technical Procedures & Health and Safety Plans

### Department of Energy Projects

#### **Technical Procedures/Test Plans**

- Technical Procedure, TPR-154, “OU 7-13/14 Integrated Probing Project Operational Support Activities”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, May 21, 2001.
- Technical Procedure, TPR-1664, “Type B Probe Testing at the Cold Test Pit”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, November 30, 2000.
- Technical Procedure, TPR-1669, “Type B Probe Datalogging Procedure”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, April 2, 2003.
- Technical Procedure, TPR-1672, “Type B Soil Moisture Probe Installation”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, May 30, 2002.
- Technical Procedure, TPR-1672, “Type B Visual Probe Installation”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, July 16, 2001.
- Technical Procedure, TPR-1674, “Glove Bag Supported Sample Acquisition from Type B Probes in the Subsurface Disposal Area”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, August 16, 2001.
- Technical Procedure, TPR-1692, “Type B+ Probe Testing”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, September 3, 2002.
- Technical Procedure, TPR-1760, “Type A Probe Installation”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, May 29, 2003.
- Technical Procedure, TPR-6875, “Data Acquisition System Test For OU 7-13/14 Probing Project”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, June 11, 2003.
- Technical Procedure, TPR-1763, “Type B Tensiometer Operation and Maintenance”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, January 24, 2002.
- Technical Procedure, TPR-178, “OU 7-13/14 Site Preparation”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, April 23, 1999.
- Technical Procedure, TPR-179, “Probehole Installation OU 7-13/14”, DOE Idaho National Engineering & Environmental Laboratory, Environmental Restoration, April 23, 1999.
- Technical Procedure, TPR-1650, “Use of the Gamma Spectroscopy Logging System at the RWMC”, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, September 24, 2001.
- Technical Procedure, TPR-1650, “Use of the Gamma Spectroscopy Logging System at the RWMC”, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, September 24, 2001.
- Technical Procedure, TPR-7481, “V-Tanks – Supernate Consolidation, Sludge Removal and Tank Cleaning”, DOE Idaho National Engineering & Environmental Laboratory, Technical, November 30, 2004.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- Technical Procedure, TPR-7515, “V-Tanks – Operate Off-Gas System”, DOE Idaho National Engineering & Environmental Laboratory, Technical, November 22, 2004.
- Technical Procedure, TPR-7514, “V-Tanks – Operate Consolidation Tank Systems and Perform Phase I Treatment”, DOE Idaho National Engineering & Environmental Laboratory, Technical, November 23, 2004.
- Technical Procedure, TPR-1629, “Overburden Screening”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, May 2, 2002.
- Technical Procedure, TPR-6649, “Geophysical Tomography”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, July 12, 2002.
- Technical Procedure, TPR-1697, “Waste Handling and Overpacking in Approved RCRA/CERCLA Storage Areas”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, April 30, 2003.
- Technical Procedure, TPR-1791, “OU 7-10—Initial Facility Startup”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, July 31, 2003.
- Technical Procedure, TPR-1788, “OU 7-10—Setup and Operate the Standby Power System”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, June 17, 2003.
- Technical Procedure, TPR-1789, “OU 7-10—Drum Repackaging”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 6, 2003.
- Technical Procedure, TPR-1792, “OU 7-10—Handle and Remove Overburden”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 4, 2003.
- Technical Procedure, TPR-1793, “OU 7-10—Retrieve Waste”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, June 10, 2003.
- Technical Procedure, TPR-1794, “OU 7-10—Waste Handling, Sampling, and Packaging”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 5, 2003.
- Technical Procedure, TPR-1795, “OU 7-10—Drum-In Materials and Drum Changeout”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, June 18, 2003.
- Technical Procedure, TPR-1796, “OU 7-10—Glove Change-Out Operations”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 1, 2003.
- Technical Procedure, TPR-1797, “OU 7-10—Waste Sample Storage and Transfer”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 6, 2003.
- Technical Procedure, TPR-1798, “OU 7-10—Underburden Sampling and Sample Transfer”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, June 23, 2003.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- Technical Procedure, TPR-1799, “OU 7-10—Bag-In/Bag-Out Operations”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 6, 2003
- Technical Procedure, TPR-1801, “OU 7-10 – Set Up and Operate the Dust Suppression System”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 1, 2003
- Technical Procedure, TPR-1802, “OU 7-10—Set Up and Operate the CCTV System”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, July 8, 2003
- Technical Procedure, TPR-1803, “OU 7-10—Operate The Fissile Material Monitor”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 5, 2003
- Technical Procedure, TPR-1804, “OU 7-10—Drum Assembly”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 1, 2003.
- Technical Procedure, TPR-1805, “OU 7-10—Set Up and Operate Emissions Monitoring System”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, August 1, 2003.
- Technical Procedure, TPR-1806, “OU 7-10—Operation of the Ventilation System”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, July 3, 2003.
- Technical Procedure, TPR-1845, “Canberra CAS-300N Operation and Testing”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, May 29, 2003.
- Technical Procedure, TPR-1832, “OU 7-10—Characterization of Facility Structures”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, November 20, 2003.
- Technical Procedure, TPR-1833, “OU 7-10 – Decontamination of RCS”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, July 1, 2003.
- Technical Procedure, TPR-1834, “OU 7-10 – Decontamination of the PGS”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, July 28, 2003.
- Technical Procedure, TPR-1835, “OU 7-10—Grouting the Waste Zone”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, December 18, 2003.
- Technical Procedure, TPR-1836, “OU 7-10 – Immobilization of Residual Contamination”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, June 12, 2003.
- Technical Procedure, TPR-1837, “OU 7-10—Shutdown of WES Equipment”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, November 20, 2003.
- Technical Procedure, TPR-7370, “OU 7-10 Fogging the WMF-671 Primary Containment”, Glovebox Excavation Method Project D&D, DOE Idaho National Engineering & Environmental Laboratory, RWMC Technical, December 20, 2003.



## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- Emergency Alarm Response Procedure, EAR-108, “OU 7-10–Respond to Fire”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC: OU 7-10 Emergency Alarm Response Manual, October 19, 2003.
- Emergency Alarm Response Procedure, EAR-127, “OU 7-10–Respond to Criticality Alarm”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC: OU 7-10 Emergency Alarm Response Manual, October 19, 2003.
- Emergency Alarm Response Procedure, EAR-128, “OU 7-10–Respond to Drum Explosion”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC: OU 7-10 Emergency Alarm Response Manual, October 19, 2003.
- Emergency Alarm Response Procedure, EAR-676, “Abnormal Radiological Situations”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC: OU 7-10 Emergency Alarm Response Manual, October 19, 2003.
- Emergency Alarm Response Procedure, EAR-676, “Abnormal Radiological Situations”, Glovebox Excavation Method Project, DOE Idaho National Engineering & Environmental Laboratory, RWMC: OU 7-10 Emergency Alarm Response Manual, October 19, 2003.
- Test Plan, Requirements and Test Plan for System Operability and Integrated Testing for the OU 7-10 Glovebox Excavator Method Project, ID-PLN-1154, December 4, 2003.

### **DOE Program & Project Health & Safety Plans**

- WSHPD, “Worker Safety and Health Program Description for Idaho National Laboratory Construction Projects,”, 10 CFR 851 Compliance, Department of Energy, September 21, 2010.
- “Safety Management System and Environmental, Safety, and Health Program for Idaho National Laboratory Construction Projects,” Accelerated Retrieval Project VII (ARP VII) Facility and Ancillary Structures over Pit 10 West at the Subsurface Disposal Area (SDA), SMP-NWS, Department of Energy, September 9, 2010.
- “Construction Safety Plan for Idaho National Laboratory Construction Projects,” Accelerated Retrieval Project VII (ARP VII) Facility and Ancillary Structures over Pit 10 West at the Subsurface Disposal Area (SDA), SMP-NWS, Department of Energy, December 10, 2010.
- SSEHASP-10005-004, “Site-Specific Environmental Health and Safety Plan Drilling and Installation of Wells In support of Task Order 4,” Los Alamos National Laboratory, July 16, 2010.
- “Contract-Specific Safety Plan for Sandia National Laboratories New Mexico Technical Area 3 - Mixed Waste Landfill Evapotranspirative Cover Construction Project,” Albuquerque, New Mexico, Sandia National Laboratory, April 2009.
- NWI-LANL EP-Wide EHSP, “LANL Environmental Programs-Wide Environmental Health and Safety Plan for Projects at Los Alamos National Laboratory,” (10 CFR 851 Compliant), Los Alamos National Laboratory, August 26, 2008.
- “Beryllium Hazard Assessment National Energy Technology Laboratory – Albany,” U.S. Department of Energy, July 2007.
- WSHPD-1445, “Worker Safety and Health Program Description (for the Pit 9 Dismantlement and Disposition Project), 10 CFR 1851 Compliance, Department of Energy, May 22, 2007.
- SMP-1445, “Safety Management System and Environmental, Safety and Health Plan for LMAES Structures and Equipment Dismantlement and Disposal Project,” Idaho National Laboratory, December 22, 2006.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- Health and Safety Plan for the Los Alamos Site Office TA-73 Airport Landfill,” U. S. Department of Energy, National Nuclear Security Administration, April 2006.
- NWI-2411-001, “Health and Safety Plan for the Lower Limit of Detection Project,” Advanced Mixed Waste Treatment Facility, Idaho National Laboratory, October 2005.
- “Health and Safety Plan for the Cold Demonstration in Support of In Situ TRU Waste Delineation and Waste Removal at the Hanford 218 and 618 Burial Grounds,” Department of Energy – Headquarters, Washington D.C., July 2005.
- “Health and Safety Plan for the Kadlec Medical Center Building 748 Demolition,” Kadlec Medical Facility, Department of Energy, Hanford Operations Office, Richland, Washington, January 2005.
- “Site Specific Health and Safety Plan for The Manganese Stockpile Removal Project,” Defense Logistics Agency, Idaho National Laboratory, January 2005.
- Miller, B.P., “Health and Safety Plan for Waste Area Group 10 Track 2 Investigation of Sites CFA-54, MISC-45, and TRA-62,” ICP/EXT-05-00021, January 2005.
- Miller, B.P., “Health and Safety Plan for the V-Tanks Area CERCLA Site Remediation at Test Area North, Waste Area Group 1, Operable Unit 1-10,” ICP/EXT-04-00429, December 2004.
- Miller, B., “Health and Safety Plan for Los Alamos Site Office TA-73 Airport Landfill, NW-ID-2004-017, March 2004.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 10 Track II Investigation Sites,” INEEL/EXT-04-00120, February 2004.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 10 Remedial Actions at Trinitrotoluene and Royal Demolition Explosive-Contaminated Sites,” INEEL/EXT-03-00119, February 2004.
- Miller, B.P., Health and Safety Plan for the Vapor Vacuum Extraction with Treatment for the Organic Contamination in the Vadose Zone,” INEEL/EXT-03-00467, April 2003.
- Miller, B.P., “Health and Safety Plan for the VES-SFE-20 Hot Waste Tank,” INEEL/EXT-02-01436, December 2002.
- Miller, B.P., “Health and Safety Plan for the INEEL CERCAL Disposal Facility Operations,” INEEL/EXT-01-01318, August 2002.
- Miller, B.P., “Environmental Restoration Model for Preparation of Site-Specific Health and Safety Plans”, Bechtel BWXT, Idaho, LLC, INEEL/INT-2002-00575, March 2002.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 7 Routine Monitoring,” INEEL/EXT-01-01538, November 2001.
- Miller, B.P., “Health and Safety Plan for INEEL CERCLA Disposal Facility Operations”, INEEL/EXT-INEEL/EXT-01-01318, October 2001.
- Miller, B.P., “Health and Safety Plan for the OU 7-13/14 In Situ Grouting Treatability Study”, INEEL/EXT-2001-00766, July 2001.
- Miller, B.P., “Health and Safety Plan for the Vapor Vacuum Extraction with Treatment for the Organic Contamination in the Vadose Zone at the Radioactive Waste Management Complex Operable Unit 7-08”, INEL-96/0119, Revision 5, January 2001.
- Miller, B.P., “Health and Safety Plan for the OU 7-13/14 In Situ Vitrification Treatability Study Cold Test”, INEEL/EXT-2000-01430, January 2001.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 7 Tracer Test at the Radioactive Waste Management Complex Subsurface Disposal Area”, INEEL/EXT-00-01428, December 2000.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 3, Operable Unit 3-14, Injection Well Drilling and Sampling Project”, INEEL/EXT-2000-00528, June 2000.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- Miller, B.P., “Health and Safety Plan for the Waste Area Group 3, Operable Unit 3-14, Tank Farm Soil Remedial Investigation”, INEEL/EXT-2000-00529, June 2000.
- Miller, B.P., “Health and Safety Plan for Sampling of the Test Reactor Area VCO 145 Sodium Hydroxide Container”, INEEL/EXT-2000-00699, May 2000.
- Miller, B.P., “Health and Safety Plan for the 604/605 Soil Characterization Project”, INEEL/EXT-00-00432, February 2000.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 1 Post-Record of Decision Sampling”, INEEL/EXT-99-01045, October 1999.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 4 Operable Unit 4-13B Monitoring Well Sampling”, INEEL/EXT-99-00864, September 1999.
- Miller, B.P., “Health and Safety Plan for the Waste Area Group 1 Remedial Actions”, INEEL/EXT-99-00751, September 1999.
- Miller, B.P., Health and Safety Plan for Well Installation and Sampling Outside the Radioactive Waste Management Complex Subsurface Disposal Area, INEEL/EXT-99-00527, August 1999.
- Miller, B.P., “Health and Safety Plan for the Subsurface Disposal Area/Transuranic Disposal Area Well Drilling and Sampling Project”, INEEL/EXT-99-00923, June 1999.
- Miller, B.P., “Health and Safety Plan for the Operable Unit 7-13/14 Subsurface Investigation”, INEEL/EXT-99-00857, May 1999.
- Miller, B.P., “Health and Safety Plan for the Pit 9 Contingency Stage I Subsurface Investigation”, INEEL/EXT-98-00138, October 1998 (and revision 2, April 1999).
- Miller, B.P., “Health and Safety Plan for the Operable Unit 7-10 Contingency Project Stage I Cold Test”, INEEL/EXT-98-00570, August 1998.
- Miller, B.P., “Environmental Restoration Model for Preparation of Task Specific Health and Safety Plans”, INEL-94/0060, November 1994.

### **U.S. Army Corps of Engineers Projects**

- Accident Prevention Plan for the Delineation, Characterization and Remediation of Contaminated Media at Stryker Brigade Cantonment Areas and FWA-102, Fort Wainwright, Alaska,” USACE, Alaska District, July 2006.
- Site Safety and Health Plan for the Delineation, Characterization and Remediation of Contaminated Media at Stryker Brigade Cantonment Areas (Taku Garden), Fort Wainwright, Alaska,” USACE, Alaska District, July 2006.
- Site Safety and Health Plan for the Delineation, Characterization and Remediation of Contaminated Media at Stryker Brigade Cantonment Areas, Fort Wainwright, Alaska,” USACE, Alaska District, July 2006.
- Site Specific Health and Safety Plan for the Former Antigo Air Force Station Shallow Soils Remedial Action, Antigo, Wisconsin, NWI-ID-2006-003, USACE, Omaha District, January 2006.
- Site Safety and Health Plan and Accident Prevention Plan for the Remedial Investigation of Former Atlas “D” Missile Site 1, F.E. Warren Air Force Base, Laramie County, WY, USACE, Omaha District, July 2006.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- “Site Health and Safety Plan for the Delineation and Remediation of Contaminated Soil at Stryker Brigade Cantonment Area, Fort Wainwright, Alaska,” U. S. Army Corps of Engineers, Alaska District, August 2005
- “Site Health and Safety Plan for Solid Waste Management Unit (SWMU) 12/15 - Sanitary Waste Landfill and Pesticide Disposal Area,” Tooele Army Depot, Tooele, Utah, U. S. Army Corps of Engineers, Sacramento District, July 2005.
- “Site Safety and Health Plan for the Assessment of Petroleum and Metal Contaminated Soils at Various Locations within Alaska,” U. S. Army Corps of Engineers, Alaska District, July 2005
- “Site Specific Health and Safety Plan Operable Unit 5 Fort Wainwright Alaska”, U. S. Army Corps of Engineers, Alaska District, June 13, 2005.
- “Site-Specific Safety and Health Plan for Con/HTRW Removal at Tanaga Island and Ogluiga Island, Alaska, U. S. Army Corps of Engineers, Alaska District, May 2005
- Site Safety and Health Plan for the Assessment of Petroleum and Metal Contaminated Soils at Various Locations within Alaska, USACE, Alaska District, April 2005.
- “2004 Treatment and Operations Site-Specific Safety and Health Plan Operable Unit 2 Fort Wainwright Alaska”, U. S. Army Corps of Engineers, Alaska District, March 2004.
- “Landfill Site-Specific Safety and Health Plan for Operable Unit 4 Fort Wainwright, Alaska,” U. S. Army Corps of Engineers, Alaska District, May 2003
- “Site Specific Health and Safety Plan for the Remedial Action at SWMU 5 Building 600 Foundation, Drainage Pond, and Ditch Site, Deseret Chemical Depot, Tooele, Utah,” NW-ID-2003-017, February 2003.
- “Site Specific Health and Safety Plan Operable Unit 4 Fort Wainwright Alaska”, U. S. Army Corps of Engineers, Alaska District, June 2002.
- “Site Specific Health and Safety Plan Operable Unit 2 and 5 Fort Wainwright Alaska”, U. S. Army Corps of Engineers, Alaska District, June 2002.
- “Site Specific Health and Safety Plan for SWMU 25 Remedial Action of Former Battery Shop”, U. S. Army Corps of Engineers, Sacramento District, Tooele Army Depot Tooele, Utah, December 2001.
- “Site Specific Health and Safety Plan for Remedial Action of SWMU 54, Building 611 Sandblast Area and the SWMU 46, Building 611 Site”, U. S. Army Corps of Engineers, Sacramento District, Tooele Army Depot Tooele, Utah, September 2001.
- “Site Specific Health and Safety Plan for SWMU 49 Remedial Action G Avenue Stormwater and Industrial Wastewater Piping and Outfall”, U. S. Army Corps of Engineers, Sacramento District, Tooele Army Depot Tooele, Utah, September 2001.
- “Site Specific Safety and Health Plan for SWMU 46 Remedial Action of Used Oil Dumpsters”, U. S. Army Corps of Engineers, Sacramento District, Tooele Army Depot Tooele, Utah, August 2001.

### **Bureau of Land Management, Forest Service, Bureau of Indian Affairs Projects**

- “Site Specific Health and Safety Plan for the Manning Canyon Mine Tailing Remediation Project,” Bureau of Land Management, September 2005.
- Shungnak Site Assessment Site Safety and Health Plan, Bureau of Indian Affairs, Alaska Region, Shungnak, Alaska, October 2004.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- “Site Specific Health and Safety Plan for the Idaho Lakeview Mine Project,” U.S. Forest Service, August 2004,
- “Site Specific Health and Safety Plan for the Murtaugh Landfill Drilling and Monitoring System Installation,” September 2003.
- “Site Specific Health and Safety Plan for the Big Ox Mill Site,” June 10, 2003.
- “Site Specific Health and Safety Plan for the Upper Constitution Water Treatment System Design/Build,” October 20, 2002.
- “Site Specific Health and Safety Plan for the Nabob Mill Tailings Groundwater Diversion System Design/Build”, Bureau of Land Management, October 10, 2002
- “Site Specific Health and Safety Plan for the Lava Creek AML Sampling, Removal, and Rehabilitation Project” Bureau of Land Management, September 21, 2002
- “Site Specific Health and Safety Plan for the Menan Butte Asbestos Pipe Removal Project”, Bureau of Land Management, September 12, 2002
- “Site Specific Health and Safety Plan for the Twin Peaks Removal Action”, Bureau of Land Management, February 15, 2002.
- “Site Specific Health and Safety Plan for the Upper Snake River District Offices Combined Chemical Removal Actions”, Bureau of Land Management, December 8, 2001.
- “Site Specific Health and Safety Plan for the Currier Gulch Regrading/Reseeding”, Bureau of Land Management, October 27, 2001.
- “Site Specific Health and Safety Plan for the Moran Tunnel Maintenance Construction Actions”, Bureau of Land Management, October 25, 2001.
- “Site Specific Health and Safety Plan for the Cloward Crossing and Pass Creek Dump Removals”, Bureau of Land Management, October 19, 2001.
- “Site Specific Health and Safety Plan for the Silverton Site Tailing Removal and Soil Sampling Evaluation”, Bureau of Land Management, October 16, 2001.
- “Site Specific Health and Safety Plan for the Goldback and Motherlode Rock Dump Removal Action”, Bureau of Land Management, October 3, 2001.

### **Department of Defense, NASA and Commercial Client Projects**

- “Health and Safety Plan for Environmental Activities at NASA White Sands Test Facility (WSTF)”, September 9, 2009.
- Accident Prevention Plan (APP) for B#2524 Clean Bullet Trap Project,” Navy Facilities Engineering Command, Public Works Center – Crane Detachment, Department of the Navy Naval Facilities Engineering Command, February 5, 2007.
- “Phase II RCRA Facility Investigation Health and Safety Plan for Site AOC R (SS43) Charleston Air Force Base, South Carolina,” United States Air Force, October 2005.
- “Site Specific Health and Safety Plan for Hurricane Katrina Damage Repairs (Plan A) for Buildings 3101, 3821, 3823, 3501, 4605, Fishing Piers, and Grounds Restoration,” Keesler AFB, Mississippi, United States Air Force, October 2005.
- “Site Specific Health and Safety Plan for Hurricane Katrina Damage Repairs (Plan B) for Marina Facilities, Buildings 6726 and 6737 Restoration,” Keesler AFB, Mississippi, United States Air Force, October 2005.

## **CURRICULUM VITAE – BRUCE MILLER, M.S., CIH**

- “Site Specific Health and Safety Plan/Accident Prevention Plan for Facilities Layup Implementation and Caretaker Maintenance at the Naval Computer and Telecommunications Area Master Station, Extremely Low Frequency Naval Radio Transmitter Facility, Clam Lake, WI,” Department of the Navy, Naval Facilities Engineering Command, October 2005.
- “Site Specific Health and Safety Plan/Accident Prevention Plan for Facilities Layup Implementation and Caretaker Maintenance at the Naval Computer and Telecommunications Area Master Station, Extremely Low Frequency Naval Radio Transmitter Facility, Republic, MI,” Department of the Navy, Naval Facilities Engineering Command, October 2005.
- “Site Specific Health and Safety Plan for Cleanup of Tank 1A JP-8 Fuel Release,” Mountain Home AFB, Idaho, United States Air Force, September 2005.
- “Site Specific Health and Safety Plan for Repair of Air Force Special Operations Command (AFSOC) Annex, Building 90333,” Hurlburt Field, Florida, United States Air Force, August 2005.
- “Site Specific Health and Safety Plan for Construction of the Marina Operations Building and Fuel Supply System,” Hurlburt Field, Florida, United States Air Force, August 2005.
- “Site Specific Health and Safety Plan for the Repair and Upgrade of the Wastewater Treatment Plant,” Hurlburt Field, Florida, United States Air Force, July 2005.
- “Site Specific Health and Safety Plan for Bridge Construction on Whitbeck Street, Hurlburt Field, Florida,” United States Air Force, July 2005.
- “Health and Safety Plan for the RCRA Facility Investigation Phase III,” White Sands Missile Range, NM, January 2004.
- “Site Specific Health and Safety Plan Construction of Junior Non-Commissioned Housing Fort Wainwright, Alaska,” February 2004.
- “Site Specific Health and Safety Plan for the Site 10, Rubble Disposal Area Naval Radio Receiver Facility Naval Computer and Telecommunications Station Imperial Beach, California,” Department of the Navy, May 2002.
- “Site Specific Safety and Health Plan FY02 Dormitory Elmendorf Air Force Base”, Department of the Air Force, Anchorage, Alaska, April 2002.
- “Site-Specific Health and Safety Plan for the Inventory Reduction of Bulk Nitrocellulose Project”, (Private Client) East Camden, Arkansas, February 2002.
- “Site Specific Health and Safety Plan Groundwater Monitoring Project Hazardous Waste Landfill/Enhanced Hazardous Waste Landfill”, Rocky Mountain Arsenal, October 2001.
- Miller, B.P., “Site-Specific Health and Safety Plan for the North OB/OD Burn Pad Soil Excavation Project”, Yuma Proving Ground, December 1999.